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The MARINER'S MIRROR

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FEBRUARY 1960

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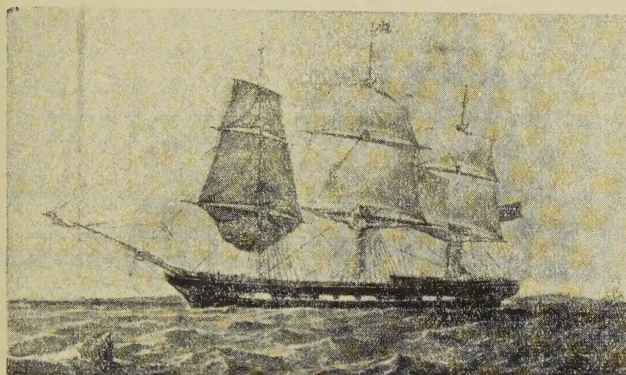
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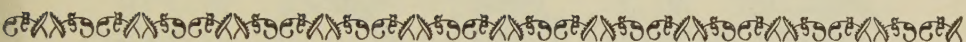
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among all
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VOL. 46. No. I

1960



RAISING SAIL IN THIRD MILLENNIUM B.C. EGYPT

By Richard LeBaron Bowen, Jr.

WE are concerned here with the sails of the Old Kingdom in ancient Egypt, a period covering the Third through the Sixth Dynasties, about 2660–2180 B.C. The sailing ships of this early time have often been described in a general manner.¹ All of these ships have a number of peculiarities regarding their sails and rigging, most of which no one has ever attempted to explain. These strange elements will become apparent in the description of several Old Kingdom ships.

The earliest detailed representations of sailing ships come from the Fourth Dynasty, about 2610–2500 B.C. (Fig. 1).² Here we see very tall sails hung from a yard which is raised high on a two-legged sheer mast. There are braces which leave both ends of the yards and lead far aft, sometimes to the hands of a man standing there. There are sometimes single forestays and backstays leading to the extremities of the boats. There are invariably a number of lines leading from the mast just below the yard to the deck aft of the mast. A boom is shown very close to the deck. In

¹ E. Assmann, 'Die Schiffsbilder', in L. Borchardt, *Das Grabdenkmal des Königs Sahu-re* (Leipzig, 1913), pp. 133–66; A. Köster, *Das antike Seewesen* (Berlin, 1923), pp. 15–43; C. Boreux, *Études de nautique égyptienne* (Cairo, 1925), pp. 347–86 for a discussion of the rigging.

² E. Assmann, *op. cit.* pp. 159, 162.

drawings after the Fourth Dynasty the boom is invariably shown lying along the top of the gunwale (Fig. 2).¹ There are never any lines (sheets) shown leading from the ends of the booms of the tall sails during the Old Kingdom, and sometimes the boom is actually shown in the unrealistic position *aft* of the mast (Fig. 2). One or two halyard lines are shown leading down from the peak of the mast between the sheer legs of the mast. And in some illustrations the sail appears to be triangular (Fig. 1). There are also lines leading to the leeches of the sails, which have been described as 'bowlines' (Fig. 1).²

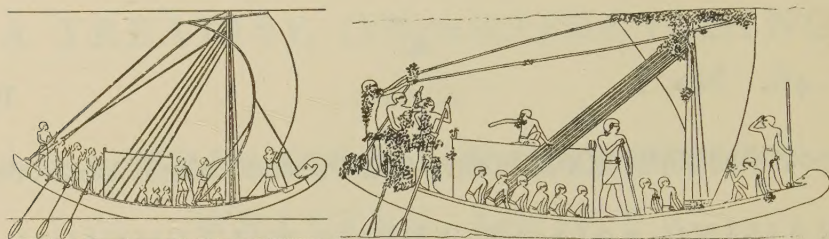


Fig. 1. Egyptian sailing ships of the Fourth Dynasty (c. 2610–2500 B.C.). The sheer masts have tall sails set on them. One of the ships (left) shows the halyard between the legs of the mast. Both have braces leading from the ends of the yards, and a strange series of lines leading aft from below the yard. Neither shows any running rigging on the boom. The sail of one (right) appears to be triangular. One ship (left) shows 'bowlines' leading from the leech of the sail. (After Borchardt, *Das Grabdenkmal des Königs Sahu-re*.)

It is with the peculiar features of these rigs that we are immediately interested here. The first of these is the series of lines leading aft from beneath the yard. There are a great number of these lines; they vary from six to eighteen, depending roughly on the size of the vessel. Many of the extant illustrations of these vessels show quite clearly that half of the lines lead down from one side of the mast, half from the other side. They are obviously not halyards, for they invariably start from *below* the yard. Further, one or two obvious halyards are usually shown between the legs of the mast. These lines could of course be backstays, but it is very difficult to understand why such a great number would be required.

The boom at the bottom of the sail offers another problem in that it never has any running rigging at the ends (sheets). We just cannot assume that they were accidentally left off every illustration of a tall sail during the 500 years which the Old Kingdom covered. The fact that sheets are not with this type of sail clearly indicates that they were not used. Then there is the

¹ N. M. Davies, *Ancient Egyptian Painting* (Chicago, 1936), Vol. 1, pl. 11.

² E. Assmann, *op. cit.* pp. 159–60; A. Köster, *op. cit.* pp. 38–9; C. Boreux, *op. cit.* pp. 385–6.

curious feature of the yard being shown on the deck. And we have also the fact that sometimes the sail was shown as triangular, although all the evidence we have from other illustrations and models indicates that the sails were undoubtedly rectangular. The bowlines on the leeches are also strange, for these vessels could never point into the wind, and there is never any gear for setting the lines up on the beam. And finally, the halyards which are shown become a problem by themselves, for it is difficult to see how they could raise these great sails, especially in view of the fact that the Egyptians definitely did not know the pulley. The halyards must have led over a bar at the top of the mast, or through a hole. There was no purchase involved; the halyards were simple falls.

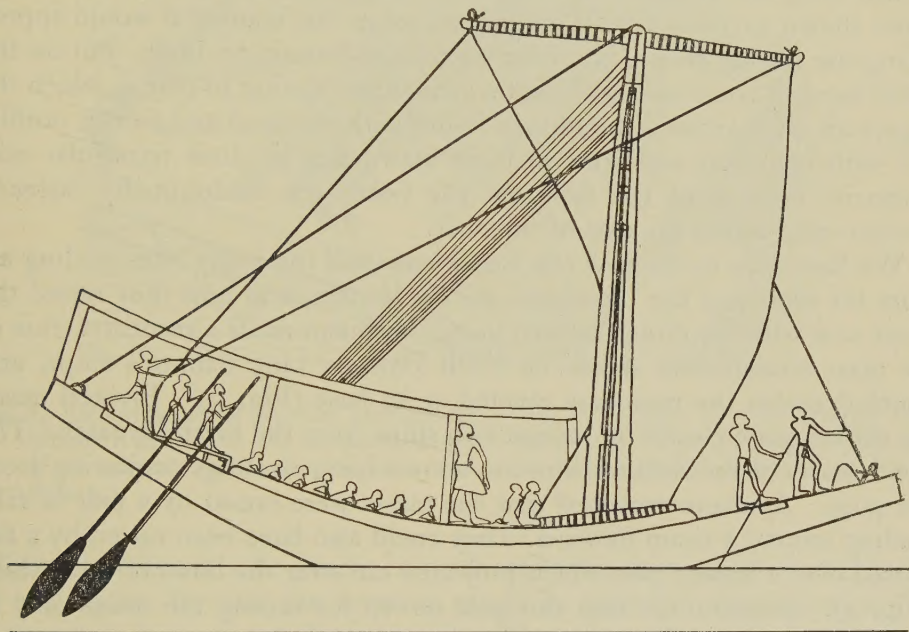


Fig. 2. Sailing ship of the Sixth Dynasty (c. 2340–2180 B.C.). Most of the details of rig are almost identical to those of the Fourth Dynasty ships. However, the boom is clearly shown lying along the line of the deck without any running rigging of any sort. The vertical lines along the boom (and the yard) are undoubtedly robands for fastening the sail to these spars. For this reason the artist is undoubtedly wrong in showing the boom in front of the mast. (After Davies, *Ancient Egyptian Painting*.)

We can devise a hypothetical manner for setting these sails which uses the existing elements of the rigging and nicely explains all of the peculiarities. We have already stated that the booms of these sails probably did not have sheets, since they were not shown in any of dozens of illustrations of these

tall sails for 500 years. In later times, starting with the end of the Old Kingdom in the Sixth Dynasty, booms are shown with sheets, but here the sails are wider than high and the booms are quite a distance above the deck line. From the end of the Sixth Dynasty down to about 1200 B.C. the Egyptian boom is firmly fixed to the lower part of the mast by a series of powerful rope lashings (when the details are shown). This is also substantiated by models. When these sails were raised the yard was simply hoisted against the fixed boom. Therefore we may assume that the booms of the Old Kingdom tall sails were likewise made fast, either to the base of the mast or to the deck at right angles to the axis of the boat. This would nicely explain why there are no sheets shown on these booms, and why they are shown lying on the deck. It would further explain why the sail was sometimes shown as triangular. With the sail set in this manner it would appear triangular in side view if the yard were braced around a little. But on the other hand, it could also represent a convention similar to that in which the Egyptian artist showed the human figure with the head and feet in profile, but with the chest and arms in front view. But he drew triangular sails primarily because of the fact that the boom was undoubtedly fastened permanently across the axis of the boat.

We have now to see how the Egyptians used the many lines leading aft from the mast and the 'bowlines' on the leeches, and how they raised the great sails with the direct halyard lines. Assmann made a reconstruction of the mast arrangement shown on Fifth Dynasty king Sahure's ships, and concluded that the mast was pivoted at its base (Fig. 3).¹ Pivoted masts are shown quite clearly on at least two ships from the Sixth Dynasty.² The sheer masts of the Sahure ships are shown lying in slings projecting from the poop. Assmann reasoned that the masts were raised by a pair of falls leading around a beam forward. They could also have been raised by a fall passed over a forked pole which projected out over the bows of these ships (Fig. 4). Assmann felt that this gear served for raising the masts only to a vertical position. But it is our feeling that this was only part of the story.

One could assume that the mast was continued past the vertical until it was canted well off the vertical over the bows.³ In this position the many

¹ E. Assmann, *op. cit.* fig. 18, pp. 151-5.

² N. de G. Davies, *The Rock Tombs of Deir el-Gebrawi* (London, 1902), Vol. II, pls. XIX, XX. A. Digby, 'Boats and Ships', in C. Singer *et al.*, *A History of Technology* (Oxford, 1954), Vol. I, p. 733, says that these particular masts had forked ends at each side to give more support. Actually the 'forked' ends are the stationary structure forming the pivot for the mast. Such pivoted sheer masts (actually used as tripods with another leg forward) survived into modern times in Eastern Indonesia. See F. E. Paris, *Essai sur la construction navale des peuples Extra-Europeens* (Paris, 1841), pl. xcv; J. Hornell, *Water Transport* (Cambridge, 1946), fig. 45, p. 226.

³ Assmann's shoes for the ends of the mast legs would have to be removed in Fig. 3.

lines leading aft from the top part of the mast were set up. Then with the mast in this position the halyard was brought into use and the yard and sail were raised. These sails were very tall, and as they were raised they would surely spill into the water unless prevented from doing so. It is our feeling that the 'bowlines' fastened to the two leeches of the sail were used to prevent this from happening (Fig. 4). These two lines would also be very important when the sail was lowered, for without them the sail would either fall in the water or foul over the stemhead. The yard could be mastheaded

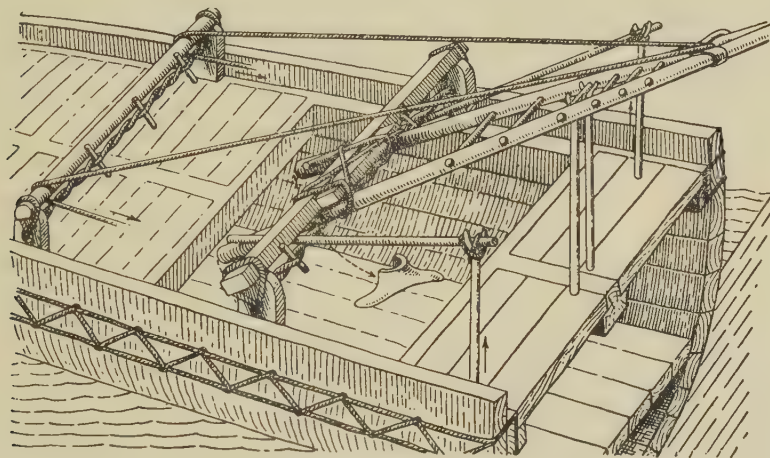


Fig. 3. Reconstruction of the mast arrangement of one of the ships of Fifth Dynasty king Sahure (c. 2480 B.C.). The pivoted sheer mast is raised out of its position over the after part of the vessel by falls leading forward. (After Borchardt, *Das Grabdenkmal des Königs Sahu-re.*)

relatively easily with the simple halyards when the mast canted forward, for by pulling out forward the pressure would be taken off the halyard at the point where it contacted the mast. Then the sail would be gently confined between the yard and the boom. Once the yard was raised all of the way, one could take up on the lines leading from below the yard (these may be called 'mast lifts'). If the boom were made fast to the deck (instead of at the base of the mast), taking up on the mast lifts would enable the sail to be stretched out with an enormous force, since a powerful lever action is produced. The use of such a procedure in raising sail explains all of the strange features of the rigging of these tall Egyptian sails, and it is consistent with every detail of contemporary as well as later sails.

The Egyptians did not know either the pulley or the block and tackle. We have pointed out that they would have had great difficulty in raising

and stretching out the great tall sails using only the halyards, since they must have run over a fixed member or through a hole. But in the arrangement we have hypothesized, the mast lifts would actually act like a block and tackle. With a number of men on each of the lifts leading back from the mast an enormous force could have been developed. Such an engine is

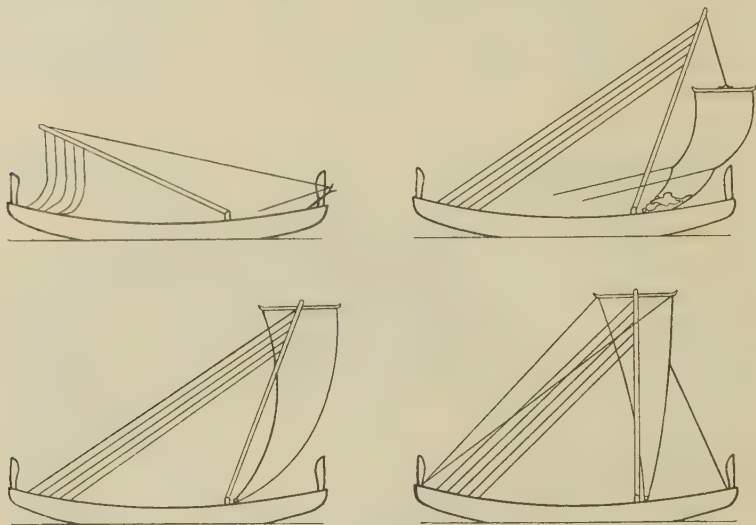


Fig. 4. Hypothetical procedure for raising the tall rectangular sails of the Old Kingdom. The mast is first raised to the vertical by a fall leading forward. Then it is canted over the bows, and supported by the mast lifts at the top of the mast. With the mast canted forward, the yard is raised with the halyard. When the yard is mastheaded, the mast lifts are taken up, stretching out the sail. (Original drawing by the author.)

essentially a sheer leg derrick, which is used in modern times. If such an arrangement were used on Egyptian ships, it may well have been used by the Egyptians on land for lifting large masses, such as the huge blocks used to build the pyramids, which were built during the Old Kingdom. However, there is absolutely no supporting evidence for this last suggestion.¹

¹ A. G. Drachmann, 'A note on Ancient Cranes', in C. Singer *et al.*, *A History of Technology* (Oxford, 1956), Vol. II, pp. 658-62, shows that there is clear evidence (from the ancient texts) that the sheer leg derrick was used by the Greeks and the Romans. This was undoubtedly inherited from some earlier civilization in the Near East, and would make it easier to understand how the ancients moved many of their huge statues and architectural blocks. It is certainly not reasonable to suggest that the Greeks were the first to use such an engine.

SEA-POWER IN THE ANGLO-SCOTTISH WAR, 1296-1328

By W. Stanford Reid

IN nearly all accounts of England's unsuccessful attempts to bring Scotland under her rule during the reign of the first two Plantagenet kings, interest has usually been concentrated upon sieges and land battles. Although some of the early chroniclers make passing references to the use of ships for transport and even for raiding, neither they nor later historians seem to have felt that either side developed any concrete naval strategy, or that sea-power was of any importance in determining the eventual outcome of the conflict.

If, however, one turns to the documents of the period, and also reads between the chroniclers' lines, one cannot but come to the conclusion that to ignore the naval aspect of the Anglo-Scottish war is to misinterpret the whole struggle. Much of the English kings' strategy was based upon the assumption that they would possess unchallenged control of the seas. But when this assumption proved to be false, Edward I's plans, which were later adopted by his son, fell to the ground. Thus it is necessary to keep the influence of sea-power continually in mind if one is to obtain a proper understanding of the Scots' successful resistance.

I

From the inception of his Scottish campaigns, Edward I always depended upon ships as his chief means of transport.¹ On the east coast they carried most of the supplies of his armies marching overland to the borders of Scotland, while on the west they were responsible for conveying not only supplies but also most of the men to the 'jumping-off point' for an invasion. The reason for the particular importance of water transport in the west was that Ireland usually provided the majority of the troops and these Edward could land in England only if he possessed a well-organized fleet. Thus for the campaigns of 1296, 1299, 1301 and 1303, to bring the Earl of Ulster's large expeditionary forces into action, Edward found it necessary to press into use ships, not only from Ireland, but also from most of the English

¹ F. M. Powicke, *The Thirteenth Century, 1216-1307* (Oxford, 1953), pp. 402, 422 f., 440, 655. K. M. E. Murray, *The Constitutional History of the Cinque Ports* (Manchester, 1935), p. 29.

ports on both the west and south coasts.¹ That he obtained at least the minimum number of vessels necessary made it possible for him to land his army wherever he willed, and so eventually to crush the 'rebels' in the west.

Second only in importance to the carrying of troops, was his ships' responsibility for keeping the English expeditionary forces supplied with food and arms. Scotland was a poverty-stricken country at best during these years, for not only did she lack such natural resources as would meet her basic needs even in peacetime,² but from 1296 to 1322 she also suffered from the continuous ravaging of her land by both English and Scottish armies. Consequently, Edward found it necessary to provision his troops from the home base, an operation which, if carried out over Scotland's rough terrain, would have been both difficult and costly. Consequently, when advancing beyond the border, whether on the east or the west coasts, he always endeavoured to make sure that his forces were supported by fleets carrying his stores. Both Walter of Hemingburgh's and Nicholas Trivet's accounts of the expedition of 1298 which culminated in Wallace's defeat at Falkirk, make the importance of such naval operations quite clear. Hemingburgh, for instance, attributes the English failure to take Dirlton in the first assault to lack of food caused by the non-arrival of supply vessels. Both chroniclers likewise attribute Edward's near-failure in the west just prior to Falkirk largely to the same cause. When he encountered Wallace at Falkirk he was actually marching to the east coast in the hope of meeting his badly needed ships. Even Falkirk did not solve his problems, however, for he was unable to reduce Galloway to obedience after his victory, again because his fleet failed to arrive.³

It may have been these experiences which impressed upon him as never before the importance of the naval arm. Therefore in his preparations for his attack on Scotland in 1300 he took the most elaborate precautions so far, to ensure that he would have all the necessary shipping. He collected a large fleet from the ports between Hartlepool and Berwick for the east coast, and employed the Cinque Ports' fleet, supplemented by units from both the west of England and Irish ports, to meet the needs of the expeditionary force based on Carlisle. This latter fleet was probably the larger of

¹ *The Annals of Connacht*, A. M. Freeman, ed. (Dublin, 1944), pp. 197, 203; *Calendar of Chancery Warrants, 1244-1326* (London, 1927), Vol. 1, p. 160; *Exchequer Accounts Various*, Public Record Office, E101:10/30, 11/2.

² I. F. Grant, *The Social and Economic History of Scotland before 1603* (Edinburgh, 1930), p. 321; K. H. Vickers, *England in the Later Middle Ages* (London, 1914), p. 59.

³ Walter de Hemingburgh, *Chronicon* (London, 1849), Vol. II, pp. 175, 176, 181; Nicholas Trivet, *Annales* (London, 1845), pp. 371-3.

the two, amounting to at least some sixty vessels.¹ For the armies of 1301 he made a similar provision of shipping from all of England's and Ireland's ports.

One may perhaps gain some idea of the amount of stores carried by the western squadron alone when one realizes that in this campaign Edward ordered Ireland to provide: 3000 quarters of wheat, 3000 quarters of oats, 2000 quarters of malt, 500 quarters of beans and peas, 200 casks of new wine, 500 quarters of salt, 10,000 hard fish and 15 lasts of herring. This order was repeated twice later on, but it is difficult to say whether the repetitions were new orders, or were merely reiterations of the original instructions which had not been obeyed.² On another occasion Edward had to bring large quantities of hay to Linlithgow from England in order to keep his horses alive.³ Again in the 1303 expedition he relied heavily upon the sea, transporting in thirty ships from Lynn two bridges for the purpose of crossing the Forth, and having arms and siege engines along with other equipment, sent to him as he made his progress to Inverness.⁴ One cannot but feel that if he had not possessed the necessary shipping he could not have succeeded as he did in bringing the country to its knees.

Nor did the responsibility of his captains end with the Scots' complete submission. The main Scottish fortresses which Edward took into his hands as a sign of his suzerainty had to be provided with food and arms as well as garrisons. To meet this need Edward seems to have organized a regular transport system whereby ships continually brought wheat, oats, wine, meat, and other commodities from the east coast between Thames and Tyne to Berwick, for distribution to eastern strongholds such as Edinburgh, Stirling, Linlithgow and Aberdeen; and to Skinburness on Solway Firth, for the western castles of Dumfries, Lochmaben and Annan.⁵ Although Ireland was the source of most of the supplies for the western area, there was also a steady trickle of vessels to Skinburness from Gloucester, Cornwall, Devon, Salop, Stafford, Lancaster and Gascony.⁶ Thus by the use of his ships Edward was enabled to keep the country under control.

¹ *Calendar of Patent Rolls, 1292-1301* (London, 1895), p. 455; J. Bain, *Calendar of Documents Relating to Scotland* (Edinburgh, 1884), Vol. II, pp. 1112, 1115; J. Bain, *The Edwards in Scotland, 1296-1327* (Edinburgh, 1901), p. 31.

² *Exch. A/cs Var.* E101: 9/7; *C.P.R. 1292-1301*, p. 5960; Bain, *Calendar*, Vol. II, pp. 1193, 1237.

³ *Ibid.* Vol. II, 1263, 1266; Trivet, *op. cit.* p. 395.

⁴ Bain, *The Edwards*, p. 40; Bain, *Calendar*, Vol. II, pp. 1375, 1386, 1408.

⁵ J. Stevenson, *Documents Illustrative of Scottish History, 1286-1306* (Edinburgh, 1870), Vol. II, DXXII, DXXIII; Bain, *Calendar*, Vol. II, pp. 997, 1115, 1482, 1552, 1553. The English took Berwick in 1296.

⁶ *Ibid.* Vol. IV, addenda, pp. 392 ff. The accounts of James of Dalilegh who was the receiver of the supplies at Skinburness and Saltcotes are contained in Bain, *Calendar*, Vol. IV, addenda. He was responsible for provisioning Dumfries, Wellhouse, Holmcoltram and other strongholds.

Up to this point no mention has been made of the employment of ships as men-of-war, because in Edward I's campaigns this aspect of their duties was relatively unimportant. The Scots did not have the means of attacking the English fleets. There had been a number of Scottish galleys stationed at Ayr in the 1260's, but by the end of the century they were either non-existent, or in Edward's hands.¹ As he also controlled the Scottish port towns, their skippers, even should they have wished to, had no opportunity to raid his lines of communication. There is one reference in 1299 to plans for capturing the Scottish ambassadors on their way home from the continent, but whether they were sailing in Scottish vessels is not stated.² The only threats to Edward's naval supremacy came from the Germans, who probably captured a few English cogs which they carried to Scotland, and from French privateers who attacked the English in the Channel, but neither was of great significance.³

To meet possible French attacks, in 1296 Edward dispatched some ships under William de Leyburn and others to the coast of Calais. At the same time, he placed Osbert Spaldington in command of eight vessels, although he desired to have 100 or more, to patrol between Lynn and Berwick presumably to prevent English supplies from going to the Scots. It was this squadron also which supported him that year in his successful attack on Berwick.⁴ When the Scottish ambassadors mentioned above were about to sail from Dam to Scotland he attempted to organize a temporary fleet under William le Jetour, master of the *Saint George*, but apparently without much effect.⁵ On the west coast also, in Bute and Kintyre, by the middle of 1301 he had established a fleet of local galleys which he placed at first under the command of the recently created Lord of Arran, Hugh Bisset of the Glens, who probably had the responsibility of keeping an eye

1 J. Stuart, and G. Burnett, *Exchequer Rolls of Scotland* (Edinburgh, 1878), Vol. 1, pp. 6, 34.

2 Bain, *Calendar*, Vol. II, p. 1071. The ambassadors were the Bishop of St Andrews and the abbots of Melrose and Jedworth who had been in France seeking aid against the English.

3 In 1294 Edward had some fifty-five German ships seized in English ports, apparently on suspicion that they were dealing with the French. This alienated the Germans, as did the English invasion's destruction of their trade in Scotland after 1296. The result was that the Germans made attacks upon English shipping, carrying the prizes to Scotland. *C.P.R. 1292-1301*, p. 245; K. Hohlbaum, *Hanisches Urkundenbuch*, Halle, 1876, Vol. 1, p. 1251; Vol. II, p. 147; J. C. Davies, 'Shipping and Trade in Newcastle on Tyne, 1294-1296', *Archaeologia Aeliana* 1953, ser. 4, Vol. xxx, pp. 177 f., 192.

4 William de Leyburn who held the lands of Elham and Langley in Kent, and was referred to as 'captain of the king's mariners'. *C.P.R. 1292-1301*, pp. 180, 245, 291, 460; Stevenson, *Doc.* Vol. II, ccl; Trivet, *op. cit.* p. 343; *Calendar of Close Rolls, Edward I* (London, 1906), Vol. IV, pp. 258-9.

5 Bain, *Calendar*, Vol. II, p. 1071.

on the Lord of Islay and his supporters.¹ Such were Edward's preparations for naval warfare, but they were apparently little needed at the time.

Naturally enough, the question arises as to the provenance of this shipping. To whom did these vessels belong? It would seem that the king, himself, possessed a few ships, but of what type is rather hard to say. Since 1066 there had always been a number of royal galleys in commission for coast-guard duty and for the carrying of messages. Besides these, by 1304, Edward had also built some barges of his own for use as transports, but once he saw Scotland completely subdued he ordered them to be sold.² Much more important than the royal ships were those of the Cinque Ports. Although liable to provide each year a total of fifty-seven under their own admiral for fifteen days, they usually seem to have succeeded in limiting their service to about half the required number of vessels. If the king needed further service from the Ports he had to pay for it.³ More important as a potential source of ships than even the Cinque Ports were the other sea-coast towns. Early in the war, to obtain the services of their vessels, the king simply issued orders to the various sheriffs telling them to have towns provide the number he required, but as he does not seem to have possessed the right to make such demands unless the country were in immediate danger, by 1302 he had changed his tone, asking the sheriffs to 'induce' or 'persuade' the various ports to send him aid.⁴ He had come to realize that he could obtain the sea-power necessary to deal with the Scots only through the towns' loyalty and good will.

Edward was not, however, entirely successful in gaining the sea-ports' co-operation. Although there is little evidence of trouble at first, by 1302

1 Apparently Edward's original intention had been to place the western fleet under a representative of the Cinque Ports, but there is no evidence that an admiral from this group of towns ever took command. It may have been that the Ports' time for service ran out before an admiral could take over, or they may have failed, as other south coast ports had done a little earlier, to send their ships. *Exch. A/cs Var.* E101: 9/7; L. Bain, *Calendar*, Vol. II, pp. 1253-5; Stevenson, *Docs.* Vol. I, DCX, DCXIV; *C.P.R. 1292-1301*, p. 588. The Lord of Islay was Angus Og who aided Bruce loyally in his conflict with the English. Cf. I. F. Grant, *The Lordship of the Isles* (Edinburgh, 1935), pp. 297, 360.

2 F. W. Brooks, *The English Naval Forces, 1199-1272* (London), pp. 132, 154; W. L. Clowes, *The Royal Navy* (London, 1897), Vol. I, p. 123; Bain, *Calendar*, Vol. IV, add. p. 1798, appendix, p. 9; *Calendar of Fine Rolls, 1272-1307* (London, 1911), Vol. I, p. 499.

3 Murray, *op. cit.* pp. 21 f., 29; Clowes, *op. cit.* Vol. I, p. 131.

4 *Ibid.* Vol. I, p. 112; *Exch. A/cs Var.* E101: 5/11; *C.P.R., 1292-1301*, p. 180; *1301-1307*, pp. 61, 75 f. In Hampden's trial in 1637 it was pointed out by Hampden's advocate that some of the major seaports had been responsible since Domesday to provide ships if the country was in immediate danger of invasion. On the other hand, the Crown held that the Cinque Ports were the only ports who held by 'sea service', and that if the other sea-coast towns refused their aid, the crown could do nothing about it. According to these interpretations, therefore, Edward was very much dependent upon the towns' favour. *State Trials and Proceedings* (London, 1776), Vol. I, pp. 522, 542.

a good many ship owners were apparently becoming weary of having their vessels occupied most of the time in the not too profitable, and perhaps dangerous, task of carrying supplies for the king.¹ Some of the ports, therefore, in reply to his requests did nothing with haste, hoping that the war would be over before their aid was required. Others simply did nothing, despite all their promises and even despite the fact that they gave security to the royal officials for the implementation of their promises. Then again, others declared themselves to be too poor to provide ships, while their inland neighbours objected to assisting them unless the king asked their help individually.² Most disconcerting of all were the seaports which bluntly refused to help, or which sent ships whose crews, when they had received their pay, promptly returned home. In this latter classification, Bristol seems to have been the worst offender.³ In November 1303 Edward issued a long complaint concerning the actions, or lack of action, on the part of some of the towns, but apparently without very much effect. Yet despite all the objections and refusals he still obtained, by one means or another, sufficient bottoms to supply his army in its final conquest of Scotland.⁴

By 1303 most of the Scottish nobles had sworn everlasting obedience to the English monarch, and although Wallace kept up a guerilla resistance, in 1305 he was captured and executed. Edward had conquered, one reason for his victory being his overwhelming naval strength which had enabled him to move his armies as he willed, and so to bring to nought the efforts of the most devoted patriots.⁵ To all intents and purposes the war was over.

The murder of the Red Comyn in Dumfries on 10 February 1306 by Robert Bruce, Earl of Carrick, at one blow changed this picture. Rebellion, although at first not very widespread, once again raised its head, and despite

1 *Exch. A/cs Var.* E101: 9/7, 10/21; *C.P.R. 1301-1307*, p. 52. On 30 August Edward complained that twenty-one towns had failed to fulfil their promises.

2 Bain, *Calendar*, Vol. II, p. 1357.

3 *C.P.R. 1301-1307*, pp. 53, 121, 128, 131, 187, 203.

4 *Fine Rolls*, Vol. I, p. 485.

5 That Edward felt that his victory was largely owing to his naval forces would seem to be revealed in his instructions of 30 October 1304, to both Yarmouth and Newcastle, to either sell or turn over to his creditors barges which the towns were constructing for service against the Scots, but for which he now had no use. *Fine Rolls*, Vol. I, p. 499. Some indication of how dependent he had been on naval predominance in all his campaigns is indicated by references in Bain, *Calendar*, Vol. II, pp. 997, 1115, 1386, 1408, 1482, 1491, 1492, 1552, 1553.

Bruce's apparently well-nigh desperate position, from the point of sea-power he actually had some clear advantages over the earlier leaders of Scottish revolts. For one thing, Edward as a result of his alliance in 1303 with France, had expelled all Flemings from his realm in return for the French dealing out similar treatment to the Scots.¹ This action forced the Flemings and Scots to make common cause. Furthermore, Edward irritated his own merchants by his seizure of their wool, his increased demands for taxes, and his granting of privileges to foreigners, while at the same time he earned the opposition of Scottish merchants by forcing them to submit to his unaccustomed financial and commercial yoke.² In the long run all these Edwardian moves played directly into Robert Bruce's hands, despite the apparent blackness of his immediate future.

Within two months of the death of Comyn, Edward I was again preparing to lead an expedition against the Scots. To support him in this campaign he issued orders for the Irish authorities to despatch supplies to Skinburness, but added strict instructions for all ships to stay far away from Ayr and Galloway, no doubt because the galleys of Angus Og, Lord of Islay, were supporting the rebels. At the same time he also organized two fleets, one on the west coast made up of units principally from the Cinque Ports under the command of John, Lord of Argyle, a relative of the murdered Comyn, and another on the east under Edward Charles.³ All his preparations were in vain, however, for on 6 July 1307 he died at Burgh-on-Sands.

II

Between the death of 'the Hammer of the Scots' and the Battle of Bannockburn (1314) one may observe a striking change in the pattern and balance of Anglo-Scottish sea-power. While English naval strength does not appear to have declined, that of the Scots, on the other hand, increased, with the result that by 1314 the odds against the latter were not nearly so great. This was ultimately one of the reasons for the Scottish victory.

Although Bruce at first found it necessary to flee before Edward's forces, the failure of the English western fleet to capture him when he took refuge

¹ The French king was at the time attempting to bring Flanders under his control very much as Edward I was attempting to subdue the Scots. Hemingburgh, *op. cit.* Vol. II, p. 233; Trivet, *op. cit.* p. 406.

² *C.C.R. Ed. I*, Vol. v, 153, 229; Stevenson, *Docs.* Vol. II, p. dcxlvii.

³ The Cinque Ports, apparently tired of Edward's demands, succeeded in having him accept only twenty-seven of the fifty-seven ships due, although they had to provide enough men to man the maximum number of vessels. Gervaise Alard commanded the fleet of the Cinque Ports and all other ships from the south coast. Bain, *Calendar*, Vol. II, pp. 1763, 1822; *C.P.R.*, 1301-1307, pp. 431, 438; *C.C.R. Ed. I*, Vol. v, p. 482.

in the Isles, meant that the war would continue. To overthrow 'the rebels' therefore, Edward II carried out major campaigns in 1308, 1311 and 1314. In each of these he followed closely the example of his father, by organizing fleets on both coasts to transport his men, machines and food.¹ At the same time he added something new to English strategy by planning that John of Argyle, who held certain territory around Loch Awe, should effect a landing in the west behind the Scottish front. Argyle, however, accomplished little, for in 1308 Bruce drove him out of the country, forcing him henceforth to base his activities on Ireland. Despite this reverse, Edward still hoped that his western fleet, by an attack on Bruce's rear, would bring the war to an early conclusion. This was his reason in 1314 for designating 4000 men from Ireland for use in a type of 'combined operations' attack on the coast of Argyle.² The exiled chieftain, however, failed completely to carry out these plans, doing nothing to divert Scottish attention from Edward's main thrusts.

While employing his ships in these ways Edward placed almost as much emphasis upon their use as a means of maintaining a naval blockade. Here again he was following a policy first introduced by his father, but one to which he now turned with renewed vigour when he found that other means of reducing the Scots to obedience had failed. In 1307 Hugh Bisset had been carrying on a partial blockade of the west coast, but after Edward's failure in 1310 to bring to fruition his plans for a campaign in Scotland, he placed part of the forces promised or gathered, under his two western admirals, John of Argyle and Simon de Montague, to make the western blockade more effective.³ This plan was also followed on the east coast, with the command resting in the hands of William le Jetour.⁴ That the fleets gained some success may be taken for granted. With two fleets in the west, one based on the Isle of Man and the other with headquarters in Ireland, at least some attempts to carry goods to the Scots from France, Ireland or England were bound to be frustrated. Similarly on the east coast, the extent of le Jetour's success may be estimated from the complaints

¹ *C.P.R. 1301-1307*, p. 490; *1307-1313*, pp. 59, 81, 352, 490; *C.C.R. Ed. II*, Vol. I, p. 39; *Rotuli Scotiae* (London 1814), Vol. I, pp. 83, 84, 99, 100, 115, 116, 117, 122, 125.

² John of Argyle had been appointed commander of the western naval forces by Edward I and apparently continued in that position until after Bannockburn. There are numerous references to other commanders such as Simon de Montague who apparently were commissioned to serve under Argyle. There is no clear-cut statement concerning the official relations of the English leaders to Argyle, but that they were his subordinates seems to be the conclusion which one must draw. *Ibid.* Vol. I, pp. 91-3; Bain, *Calendar*, Vol. II, pp. 1888, 1889, 1893; Vol. III, pp. 80, 355; *C.C.W.* Vol. I, p. 352.

³ Bain, *Calendar*, Vol. II, p. 194; *Rot. Scot.* Vol. I, pp. 91-3.

⁴ *C.P.R. 1307-1313*, pp. 454, 496, 573; *C.C.R. Ed. II*, Vol. I, pp. 337, 338.

of both German and Flemish authorities concerning his seizure of some of their ships.¹ As the blockade, on the other hand, was by no means complete, it did not fulfil Edward's hopes of bringing about a Scottish collapse.

One other use which Edward II made of his naval forces was that of bringing supplies to his Scottish fortresses. From his father he had inherited the castles of Aberdeen, Perth, Stirling, Dundee, Edinburgh, Linlithgow, Berwick and Roxburgh as well as others, which despite Bruce's control of the countryside prevented the Scots from completely ousting Edward and his adherents. As a result, Bruce found it necessary to institute a series of sieges culminating in an attack on Stirling and the Battle of Bannockburn.² As most of these strongholds had connexions in some way or other with the sea, they could hold out for a long time if naval forces were able to bring in supplies. It was, therefore, with good reason that Edward devoted a considerable proportion of his ships to keeping his castles well provisioned; and as long as he possessed even a slight preponderance on the sea, he was apparently successful.³ Those fortresses which the Scots actually took seem to have fallen, not through starvation, but either by direct attack or by some stratagem.

Yet with all his efforts, Edward never succeeded in employing his sea-power in a really decisive manner. One reason for this was the state of affairs in England. Not only did he have continual trouble with his nobles, but he also could not obtain the support and co-operation of those to whom he looked for vessels and crews. Although in 1310 he himself possessed a squadron of 'royal' ships which by 1314 had received further additions, he found it difficult to obtain the necessary personnel except by issuing writs of impressment, which were at times misused by the ships' captains.⁴ To obtain the required forces, therefore, he was still largely dependent upon the seaports.⁵ As in the days of his father, however, their response

1 *Ibid.* Vol. I, pp. 451, 572; *Rot. Scot.* Vol. I, pp. 99, 107. The blockade may have been at least partially the cause of the great famine which, according to John of Fordun, reduced the Scots to eating horse flesh (*Scotichronicon*, Edinburgh, 1759, Vol. II, p. 242). The fleets cruised off the shores of Argyle, Ayr and Galloway.

2 'Annales Paulini', *Chronicles of the Reigns of Edward I and Edward II*, Wm. Stubbs, ed., Rolls Ser., 1882, Vol. I, p. 265.

3 Bain, *Calendar*, Vol. III, pp. 247, 259; *C.P.R. 1307-1313*, p. 503; *Rot. Scot.* Vol. I, pp. 58, 78, 82, 109.

4 According to a list of 18 March 1314, on the east coast the king had at least eighteen ships of his own as well as some others which had been provided, presumably by various seaports. The distinction is drawn in the list between 'king's ships' and those referred to as merely 'ships'. To the captains of all these vessels was given the right to impress sailors. Within less than a month he was rebuking the commanding officers for impressing men who were not sailors and for taking goods for which they gave no payment. *Ibid.* Vol. I, pp. 88, 89, 116, 123; *C.P.R. 1307-1313*, p. 502; *C.G.W.* Vol. I, p. 380.

5 *C.P.R. 1307-1313*, pp. 59, 81, 352; *Rot. Scot.* Vol. I, pp. 117, 122, 125, 126.

to his demands was by no means enthusiastic.¹ What was more, he had no guarantee even if he obtained the ships and men, that they would enforce a blockade, since many of his merchants whose cogs he may have been using, were themselves carrying on a profitable contraband trade with Bruce and his forces.² Thus his lack of complete success is quite understandable.

An equally important reason, on the other hand, for Edward's failure, was the increase in Scottish strength. Although Bruce, almost immediately after his coronation, had to flee before the English forces, even in that situation he had some naval forces at his disposal. Angus Og of Islay seems to have assisted the fugitive with a number of galleys.³ With such support, by January 1307 he had been able to set up his headquarters off the north coast of Ireland in the Isle of Rathlin, ruled over by his father-in-law, the Earl of Ulster. On Edward's orders, Hugh Bisset and Simon de Montague with a considerable fleet scoured the area in the hope of catching him, but again aided by some thirty galleys probably supplied by Angus Og, Bruce succeeded in eluding the watching fleet to land in Ayrshire.⁴ That Bruce's fleet after his return to the mainland continued to operate in the western coastal waters is perhaps indicated both by the descent of Edward Bruce and the Boyds on Galloway in 1308 and the English fear in 1310 of a Scottish invasion of the Isle of Man.⁵ In the light of these events one is able to understand why Edward pinned his hopes on the operations of John of Argyle.

As in the west, the Scots were also extremely active in the waters of the east coast. While continually threatening Berwick from the sea, which made Edward nervous, they also succeeded in seizing considerable numbers of English ships carrying supplies to Edward's various expeditionary forces.⁶

1 Apparently even the Cinque Ports failed completely in 1314 to meet their quotas. Although he demanded twenty-eight ships from the east coast ports, there is no indication that he obtained all that he sought. *Rot. Scot.* Vol. 1, pp. 126, 129; *C.C.W.* Vol. 1, p. 352; *C.F.R.* Vol. 1, p. 540, Vol. 11, p. 196; *C.P.R.*, 1313-1317, pp. 292, 294.

2 *Ibid.* 1307-1313, pp. 197, 228, 256; *C.C.R. Ed. II*, Vol. 1, pp. 301, 339, 337; *Rot. Scot.* Vol. 1, pp. 75, 86. This was true in the case of merchants from both Ireland and England, particularly of those living in the northern counties of both countries, although even those of the London area were also participating in the contraband trade.

3 E. M. Barron, *The Scottish War of Independence* (Inverness, 1934), pp. 271-5; Hemingburgh, *op. cit.* Vol. 11, p. 249; Trivet, *op. cit.* p. 410.

4 *C.C.R. Ed. I*, Vol. v, p. 482; Bain, *Calendar*, Vol. 11, pp. 1888, 1941; 'The Chronicle of Lanercost', H. Maxwell, ed., *The Scottish Historical Review*, 1911, Vol. vii, p. 169.

5 *Ibid.* viii, p. 279; *Rot. Scot.* Vol. 1, p. 96; Fordun, *op. cit.* Vol. 11, p. 245.

6 *Rot. Scot.* Vol. 1, p. 58; *C.C.R. Ed. II*, Vol. 11, p. 129; Barron, *op. cit.* p. 383.

Perhaps the attacks by the Scots alone would not have been so damaging, however, had they not received help from German and Flemish privateers. One indication of this is that by 1310 Edward was making vigorous complaints to the Count of Flanders, demanding that he stop his subjects from attacking English ships on behalf of the Scots. This plea, however, brought no results, for from 1310 to the middle of 1314 there are increasing numbers of references in the *Close Rolls* to attacks upon English vessels by Flemings such as John Crabbe and John le Seger, and by Germans such as Henry of Recklinghausen, all of whom carried their prizes to Scotland, thus bringing to Edward's enemies much-needed supplies.¹

With both Scottish seamen and their continental allies despoiling the English wherever and whenever possible, Edward was finding that his plans for the use of sea-power against Scotland were not likely to bear much fruit. This became even more apparent when in 1313 the Scots captured the Isle of Man.² It had been the headquarters of the fleet responsible for protecting ships bringing men and stores from Ireland to the English coast, and as long as the Scots could hold this strategic point the supply route of an English army in the west would be in continual danger. By the increase of their naval power the Scots were dealing rather effectively with the English attempts at conquest.

III

The Battle of Bannockburn (1314) marked the turning point of the war. From that Scottish victory until peace was finally established in 1328, Bruce and his forces occupied themselves successfully with the task of pushing the remnants of the English out of the country. In this phase of the struggle, the warfare at sea seems to have wielded an even greater influence than it had in the earlier stages of the conflict.

Speaking in general terms, one may say that Edward II simply continued to follow the pattern of strategy which he had already laid down. In his major but unsuccessful campaigns of 1315, 1319 and 1322 he organized his usual fleets to carry supplies, but in addition, because of the threat from Scottish and continental marauders, he now found it necessary

¹ *C.C.R. Ed. II*, Vol. I, pp. 337, 432, 436, 451; Vol. II, pp. 7, 46; *Hans. Urkund*, Vol. I, pp. I, 214; Vol. II, 324; *Rot. Scot.* Vol. I, p. 78; *Ancient Correspondence*, Public Record Office, Vol. XLV, p. 153; H. J. Smit, *Bronnen tot de Geschiedenis van den Handel met Engeland, Schotland en Ierland*, Vol. I, p. 211 n.

² Fordun reports that since Bruce's men were accustomed to fighting only on land as cavalry, he trained them especially to handle ships and to fight on foot, a practice which he found so effective in conquering Man that he employed the same tactics at Bannockburn. (*Scotichronicon*, Vol. II, p. 245.)

to provide convoys.¹ During the intervals between his campaigns he also attempted to continue the blockade both by forbidding his own and foreign merchants to trade with Scotland, and by employing his ships to enforce his orders.² In this latter endeavour he was to a certain extent successful, for his fleets picked up a number of blockade runners.³ Moreover, on at least one occasion, men from some of the east coast ports made a foray against the coast of Fife, although they eventually had to withdraw.⁴ But even after tallying all English successes at sea, the fact remains that, generally speaking, their naval operations were becoming increasingly ineffective.

One of the primary causes for this decline of English naval power would seem to have been the English merchants' growing discontent with Edward II's policies. In attempting to blockade Scotland and to stop trade with the Scots' Flemish allies, as well as in continually demanding ships for his expeditions, he was striking directly at their livelihood. Consequently, they seem to have been determined, as far as possible, to circumvent his commands. Smuggling grew apace while the number of ships reporting for naval duty when called seems to have grown smaller.⁵

1 *C.P.R.*, 1313-1317, pp. 324, 333; 1317-1321, pp. 164, 195, 325; 1321-1324, p. 102; *C.C.R. Ed. II*, Vol. III, pp. 540, 550; Bain, *Calendar*, Vol. III, pp. 751 f.; *MSS. of King's Lynn*, 11th Report of the Historical Manuscript Commission (London, 1887), p. 188; *Rot. Scot.* Vol. I, pp. 144, 139, 146, 166, 174. In 1315 Humphrey de Lyttlebury and John Sturmy were appointed to the command of a squadron of seven ships to protect merchants trading with the continent from attack by the Scots (*C.P.R.* 1313-1317, p. 334); and in 1318 Simon de Driby, William de Thewell and Robert Ashman were jointly and severally appointed to the same position (*Rot. Scot.* Vol. I, p. 194). On the west coast John of Argyle remained at sea with twelve ships throughout the winters of 1314-1315. (*Ibid.* Vol. I, p. 122; *C.C.W.* Vol. I, p. 424.)

2 *Ibid.* Vol. I, pp. 192, 193; *C.P.R.* 1313-1317, pp. 197, 263; 1317-1321, pp. 201, 205; *C.C.R. Ed. II*, Vol. II, pp. 567-8; Vol. III, p. 165; *Hans. Urkund*, Vol. II, p. 252 n.; *C.C.W.* Vol. I, p. 414. Almost immediately after Bannockburn, Edward began laying down restrictions on his own merchants, demanding that they provide security that they would not take their goods to the Scots. As an assurance that his orders would be obeyed, he also arranged that receipts be issued to the merchants at all points under his control in Scotland. (*C.P.R.*, 1313-1317, pp. 197, 205; *C.C.R. Ed. II*, Vol. II, pp. 308, 588; Vol. III, p. 20.) In 1318 he pressed the Count of Flanders to help him by forbidding Flemish merchants to trade arms and food for Scottish wool. (*Rot. Scot.*, Vol. I, p. 193.)

3 Bain, *Calendar*, Vol. III, pp. 508, 602, 639; *C.C.R.*, *Ed. II*, Vol. II, pp. 271, 517; Vol. III, pp. 67, 540; *C.P.R.* 1317-1321, pp. 114, 354.

4 John Barbour, *The Bruce*, W. M. MacKenzie, ed. (London, 1909), bk. xvi, p. 535.

5 *C.P.R.* 1313-1317, pp. 201, 249, 259, 277, 418, 420, 679, 686; *C.C.R. Ed. II*, Vol. II, pp. 395, 588; Vol. III, pp. 20, 234. The statement in the *Close Rolls*, Vol. II, p. 132 makes clear what was happening: '... as the king understands that native and alien merchants, under colour of permission that corn and victuals might be exported from that port [Lynn] to foreign parts upon security being given that they would not be taken to the Scotch rebels, [are] carrying great quantities of corn and victuals from that port to the Scots, asserting that they are carrying the same to parts beyond the sea.' Before indulging in this illicit trade, however, the merchants and authorities of Lynn had asked that the embargo against trading with the Scots be lifted, without any success. (*Rotuli Parliamentorum*, Vol. I, p. 331.)

Coupled with this, Edward had difficulties with his captains who seem to have possessed a facility for forgetting their responsibilities on the receipt of bribes, for turning, when the opportunity offered, to open piracy, or for doing nothing.¹ Thus insubordination and disorganization went hand in hand, to the detriment of the royal plans.

The influence of Edward's difficulties on his naval policy is seen first on the west coast where events were moving at a rapid pace. If an English army were to receive support from Ireland Edward would have to protect his lines of communication by expelling the Scots from the Isle of Man.² This operation John of Argyle successfully accomplished in the latter months of 1314. So pleased was Edward with this venture that he then promptly ordered Argyle to attack western Scotland with 10,000 men. This plan, however, never materialized.³ Nevertheless the recovery of Man was an important victory, for when Edward Bruce in 1315 landed in Ireland from Ayr, the English held in it a strategic base from which to attack his supply lines. Unfortunately for Edward, John of Argyle was by this time physically incapable of acting as admiral, and his successors never pressed their advantage. Apparently confused by the political situation at home, they were content to stay primarily on the defensive.⁴

To the Scots, therefore, fell the initiative not only on the land, but also on the sea. Thomas Dun, a Scottish privateer, raided at will along the coasts of Ireland and Wales until he was captured by John d'Athy in 1317; and he was only one of a considerable number, who between 1315 and 1322 'infested' the waters between Ireland and Scotland.⁵ Scottish power was bidding fair to dominate the 'narrow seas'.

1 John de Bouteturte, who was appointed admiral for the east coast in March 1315 (*Rot. Scot.* Vol. 1, p. 139), was authorized to choose twenty-three vessels for service against the Scots. He was soon accused, however, of accepting bribes to pick unsuitable ships. (*C.P.R.* 1313-1317, p. 327.) Whether this was proven is not stated, but he was still admiral in 1316, although he had only seven ships under his command. (*Exch. A/cs Var.*, E 101, 15/3.) Lyttlebury and Sturmy apparently achieved little or nothing against the Scots. (*C.C.W.* Vol. 1, p. 432.) Edward's attempts to seize ships for naval service and his failure to return them at the promised times did not add to the popularity of his naval policies. (*Rot. Scot.* Vol. 1, pp. 143, 144; *C.C.W.* Vol. 1, p. 429.) In 1317, 1318 and 1319 he made further demands for ships from the seaports, but in at least the case of South Yarmouth he was obliged to compromise by allowing those who did not wish to fight to supply arms to those ready to take part in the operations. (*Rot. Scot.* Vol. 1, pp. 174, 184, 189, 195.)

2 Cf. *C.P.R.* 1321-1324, p. 126.

3 *C.C.W.* Vol. 1, p. 424; *Rot. Scot.* Vol. 1, pp. 132, 138; Bain, *Calendar*, Vol. III, pp. 415, 447, 479.

4 *Rot. Scot.* Vol. 1, pp. 146, 166; *C.C.W.* Vol. 1, p. 449; *C.P.R.* 1317-1321, p. 165. John of Argyle seems to have remained in command until 1317 when he was succeeded by John d'Athy. (Bain, *Calendar*, Vol. III, p. 479; *Rot. Scot.* Vol. 1, pp. 139, 146, 166, 173; *C.P.R.* 1317-1321, p. 165.)

5 On 12 September 1315, Thomas Dun, Hegyn Giffyn, Wadyn Sotherne and Gybon Malytton with 'a great navy of the Scots', raided Holyhead and plundered at least one English

Confirmation of this conclusion appears in Edward Bruce's invasion of Ireland. In the summer of 1315, in some 300 ships, according to one chronicler, Bruce carried an army of 6000 men to Ireland without opposition.¹ Edward of England responded to this challenge by immediately attempting to organize a fleet to protect the English coast and to cut the Scots' lines of communication, but without any great success.² Then in 1317 King Robert arrived in Ireland with reinforcements and, if Barbour's report be true, returned home in the autumn without the English making any attempt to attack him. One reason for this lack of opposition may be, as Barbour has claimed, that during his sojourn in Ireland, Robert had brought the Isle of Man once more under Scottish control.³ The Scots would, by this capture, completely control the seas between Ireland and Scotland.

Even prior to his voyage to Ireland, however, Robert had strengthened his hold on the west. Always ready to take advantage of his opportunities, once his brother had landed in Ireland, he employed the fleet to force the petty lordlings of the Western Isles, a good many of whom owed allegiance to John of Argyle, to submit; and neither the English nor Argyle were able to stop him.⁴

On the east coast the situation was much the same. From 1315 on, Scottish privateers aided by Flemings and Germans who probably did not even carry *letters of marque*, despite Edward's attempts at a blockade, raided at will. The extent of their success is reflected in the continual stream of complaints by English merchants to Edward deploring the loss of their ships and calling upon him for protection and redress.⁵ That the king, however, was able to do little became clear in 1322 when he himself found

ship lying at anchor in the harbour. (*C.C.W.* Vol. 1, p. 426). The same Dun, probably in the following year, saved part of Edward Bruce's army in Ireland from annihilation by sailing up the River Bann with four vessels with which he ferried the army to the other side when they were in danger of being surrounded. (Barbour, *op. cit.* bk. xiv, pp. 350 ff.) Eventually, Dun's depredations became so serious for the English that Edward commissioned a squadron under Nicholas Dauneay and Geoffrey Modiworth to devote their time to pursuing him and his companions. (*C.P.R.* 1313-1317, p. 696.) That the English were successful in their efforts is indicated by Edward II's report to Aymer de Valence that John d'Athy had captured Dun, although since he was only one of a number, this achievement did not entirely solve the problem. (Bain, *Calendar*, Vol. III, p. 562.)

¹ *Ann. of Connacht*, p. 231; Barbour, *op. cit.* bk. xiv, pp. 20 f.; 'Vita Edwardi Secundi', *Chron. of Ed. I & Ed. II*, Vol. II, p. 211.

² The English failure at this point may have been partially due to the fact that John of Argyle was still in command, although apparently unable adequately to fulfil his duties. This would have hampered John d'Athy who does not seem to have taken charge of operations until 1317. Bain, *Calendar*, Vol. III, pp. 448, 519; *C.P.R.* 1317-1321; pp. 164, 195; *Rot. Scot.* Vol. 1, p. 173.

³ Barbour, *op. cit.* bk. xvi, pp. 690 f.; cf. Barron, *op. cit.* p. 411 f.

⁴ Barbour, *op. cit.* bk. xv, pp. 267 f.

⁵ The Scots had apparently organized a fleet on the east coast similar to those on the west, with which following Bannockburn they raided the English coastal towns, and Edward in

it necessary to urge the Barons of the Cinque Ports and the seamen of Norfolk and Suffolk to protect him from the Flemings who were planning to launch attacks on his forces then invading Scotland.¹

Scottish sea-power, however, achieved its greatest victory not by petty raids, but in helping to recapture Berwick. Almost immediately after their victory at Bannockburn, the Scots seem to have set up a blockade of this most important commercial centre; and by October 1315 the fortress's commander was complaining that his stores were running low because of the seizure by Scottish ships of English supply vessels.² Although Edward appointed John Sturmy and William le Jetour to the command of a squadron of seven ships to break this blockade, they devoted themselves mainly to despoiling their own merchants, thus accomplishing nothing.³ Nor did their successor Simon de Driby achieve any better results. Finally, in sheer desperation the town authorities took over Berwick's defence, apparently attempting to bring in what they needed overland.⁴ As Edward strove to throw in supplies and men, however, the Scots drew their encircling lines tighter until, on 25 March 1318, through treachery, the town at length capitulated. The castle continued to hold out, but before three months had passed, it too had fallen. There is little doubt that much of the credit for this victory should go to the Scots' fleet which had prevented the arrival of material and reinforcements, so bringing about the town's and castle's surrender.⁵ Although Edward attempted by his expedition of 1319 to retake the strategic stronghold by a 'combined operation', he was entirely unsuccessful, largely owing to the aid given the Scottish garrison by the notorious Flemish pirate John Crabbe, who was now fighting on land.⁶

March 1315 also refers to a fleet of 'thirteen great cogs of the Scotch rebels', which was in Sluis to obtain arms. (*C.C.R. Ed. II*, Vol. II, pp. 218; *Rot. Scot.* Vol. I, p. 136.) At the same time the Flemings, Bretons and Germans were participating in raids upon the English lines of communication. *Ibid.* Vol. I, p. 136; Smit, *Bronnen*, Vol. I, p. 235; Bain, *Calendar*, Vol. III, pp. 417, 537; *C.C.R. Ed. II*, Vol. III, pp. 92, 216, 386; *C.C.W.* Vol. I, p. 447.

¹ *C.P.R. 1321-1324*, p. 102.

² One English captain in the autumn of 1315 is reported to have thrown his cargo overboard to escape the Scots, while the following spring the raiders were credited with the capture of two supply ships on one day. (Bain, *Calendar*, Vol. III, pp. 455, 486, 511.) In March 1316, the commander reported that he could mount only 50 of his 300 men-at-arms since the horses had died, and what was even worse he had to put the soldiers' arms in pawn to obtain food. (*Ibid.* p. 477, cf. also *C.C.W.* Vol. I, p. 428.)

³ *Rot. Scot.* Vol. I, pp. 151, 154; *MSS. King's Lynn*, p. 187.

⁴ Bain, *Calendar*, Vol. II, pp. 558, 575, 588.

⁵ *Ibid.* Vol. III, pp. 593, 596, 597; J. Stevenson, *Illustrations of Scottish History from the Twelfth to the Sixteenth Centuries*, Maitland Club, 1834, pp. 5, 7; Barbour, *op. cit.* bk. xvii, note on line 198.

⁶ *Ibid.* bk. xvii, 261 ff.; *Rot. Scot.* Vol. I, p. 187; H. S. Lucas, 'John Crabbe: Flemish Pirate, Merchant and Adventurer', *Speculum*, 1945, Vol. xx, pp. 334-50.

With the fall of Berwick the chance that the English would ever reconquer Scotland became very dim. Edward, it is true, made one last desperate effort in 1322, but despite his advance as far as Edinburgh he failed. Bruce had so cleared the land of all supplies that the English were forced to depend upon their supply ships which, in turn, found it impossible to reach the expeditionary force owing to contrary winds. As a consequence Edward soon retired within his own borders.¹

This English failure virtually brought the war to an end. Although Edward, following the death of Robert, Count of Flanders, persuaded the Flemish government to forbid further aid to the Scots and to expel them from the country, his success in this move brought him little advantage. With political troubles increasing at home and Bruce's power growing on both sea and land, his hope for ultimate victory over Scotland practically disappeared. As a result in 1323 he agreed to a thirteen years' truce.²

While officially signifying the end of hostilities, the peace proved to be somewhat uncertain as minor skirmishes and raids continued to take place on both sea and land. Because of this state of affairs, Edward seems to have maintained in commission a skeleton fleet ready for emergencies. Thus when in 1326 the Scots began to make threatening gestures he immediately mobilized his own ships, and at the same time called for all the naval forces of the nation to be placed at his disposal. Nothing happened at that time but when fighting did break out the following year, both sides prepared to fight for control of the sea.³ The threatened eruption of war, however, again subsided, the twenty-five years struggle being concluded with the signing of a permanent peace in 1328 shortly after Edward III's succession.

As one looks back over the Anglo-Scottish war, it would seem to be quite clear that, although historians have usually ignored the part played by naval forces, they were of considerable importance. Had the Edwards succeeded in enforcing a blockade against Scotland there is little doubt that the Scots

¹ Barbour, *op. cit.* bk. xviii, p. 260. Edward's naval preparations for this expedition had been similar to those he had organized previously. John Perburn of Great Yarmouth had been made admiral on the east coast, Sir Robert de Leyburn, sheriff of Lancashire, admiral on the west and Robert Bataille of the Cinque Ports, commander of the forces against the Flemings. (Bain, *Calendar*, Vol. III, pp. 751, 752, 754.) Edward issued orders for the Cinque Ports fleet to take action to protect his rear, and at the same time gave the other admirals authority to seize all needed ships. (*C.P.R. 1321-1324*, p. 102; *Rot. Parl.* Vol. I, p. 104.) Although he was ready enough to promise payment of crews, it would seem that his promises frequently failed to materialize, which tended to rouse the opposition of the mercantile element. (*Exch. A/cs*, E159/95; *Rot. Parl.* Vol. I, p. 414.) But what caused them even more annoyance was the fact that the king completely ignored their needs as fishermen and merchants, and there are a number of protests against the taking over of their vessels for military purposes. (*Rot. Parl.*, Vol. I, p. 405.)

² *C.P.R. 1321-1324*, p. 269; Bain, *Calendar*, Vol. III, p. 811.

³ *C.P.R. 1324-1327*, pp. 11, 28, 310; *Rot. Scot.* Vol. I, pp. 209, 212.

would have been obliged, simply for lack of supplies, to submit. As it was, the English failure to control the high seas meant that not only did the Scots continue to obtain the necessary material of war, but that they were able to disrupt and weaken English efforts to invade and subdue their country. Thus naval warfare occupied an important place in the whole picture of the conflict, a fact which the Scots seem to have forgotten until the days of James IV, but which Edward III was forced by geography to keep in mind when ten years later he launched his attacks upon France.

THE ARMS AND FLAGS OF THE BOARD OF ORDNANCE

By Jacques W. Steeple

BEFORE the invention of guns, the supply of arms and equipment to the King's forces was the province of various officers—the Bowyer, the Crossbowyer, the Galeater (helmets), the Armourer and the Keeper of Tents. With the coming of guns another office was needed. Henry VIII combined all these offices into a single one, the Office of the Ordnance, under a Master General. The term 'ordnance' is of course not confined to guns and ammunition but embraces all manner of military stores.

The Master General had various subsidiary officers, a Lieutenant, Store-keeper, Surveyors and other minor officers, with headquarters at the Tower (of London), the principal arsenal of the King. The office ranked immediately below that of the Lord High Admiral and its functions served both the land and sea forces—the latter being predominantly military anyway in those days, seamen having little status—and included the building and equipping of the king's ships with guns, ammunition and all manner of stores.

Although the Tower was the principal arsenal it became necessary to open ordnance depots at other places as the forces of the Crown expanded.

The Board of Ordnance continued its functions uninterruptedly as an office of the Crown until its powers—and stores—were taken over by Parliament during the Civil War. Revived at the Restoration it was re-organized by Charles II in 1683, when *Instructions* were promulgated, laying down the duties of officers. Thereafter the Board continued its functions until 25 May 1855, when the Letters Patent for the Office were

revoked and its duties were vested in the Secretary of State for War, then Lord Panmure. The last Master General under the old system was Lord Fitzroy Somerset (later Lord Raglan).

The above is a very brief outline of the office itself, but it has been adequately covered in several books and I concern myself now with the *heraldry* of the Board.

As was natural, a seal was designed for the Board. In the P.R.O. is a letter which bears a seal (a closing seal and not a seal of office) the device on which is a gunner firing a cannon. The date of the letter is 30 May 1667.

At some time, which is indeterminate, the Board adopted a seal which had a shield-shaped device on which were three cannons (or field guns of seventeenth-century pattern) with three cannon balls on a chief. This gradually came to be accepted as the Arms of the Board of Ordnance, but it was not registered at the College of Arms until 1806. This shield design was used also as the badge of the Board. Again, at some indeterminate period, the Board adopted an ensign or flag, the first evidence of which is a Royal Proclamation of 12 July 1694 (William and Mary) which gave authority for the use of flags by vessels employed in T.M. Service by 'the Principal Officers and Commissioners' of various offices, including that of 'The Principal Officers of T.M. Ordnance'; such vessels 'shall wear a *Red Jack* with the *Union Jack* in the upper canton next the staff and in other parts of the said Jack shall be described the Seal used in the respective Offices aforesaid, by which the said ships and vessels shall be employed'. This has been taken to infer that the Ordnance had vessels of its own, but there is no evidence of this.

The navy of the period had a numerous class of vessels employed on fleet service, for victualling and the carriage of all manner of stores, and it can be assumed that the Board of Ordnance, having such close relation with the Admiralty, whom it supplied with ordnance, should use the naval hoys, galliots and lighters for transport of stores for the service of the Fleet, say from the Thames to Portsmouth or even from Deptford to Woolwich Dockyard. Indeed, it can safely be assumed that the Navy would send its own store carriers to fetch such supplies.

Vessels carrying stores from the ordnance depots to the army overseas were, we know, usually hired vessels, augmented in the eighteenth century by converted frigates or specially built storeships.

The Red Jack mentioned above has been described as a 'square' flag with the Union in the top left-hand corner.

As to the 'seal or badge' defacing the flag, authorities are silent as to its design. Perrin says that it was 'similar to that now used by the War Office'—that is the three cannon and the three cannon-balls on a shield, but that

'the colours of the field appear to have been originally red with a yellow chief'.

Unfortunately, Perrin does not give us any authority for this, perhaps logical, assumption. One thing is obvious, namely, that a red badge appeared on the red fly of a flag apparently; no doubt it would be 'fimbriated', perhaps with a yellow or other light-coloured border. In December 1683 King Charles II signed a warrant for George, Lord Dartmouth, as Master General of the Ordnance, to bear on each side of his coat of arms a field piece, 'to show the honour of his Office' and this honour was made to extend to his successors in the office. This badge of office is well illustrated in the colour of the Earl of Dartmouth's or Royal Regiment of Fusiliers of 1685, from a book at Windsor, on which the Legge family arms of the Earl are shown surrounded by a trophy of arms and in base are two contemporary field guns (similar to those later in use by the Board in their badge), facing inward and under them appear two piles of cannon-balls. The same badge of office was similarly displayed by the Duke of Marlborough in Queen Anne's time, as Master General. A captain's (company) colour of Dartmouth's regiment of the same period (1685) bears a field gun on the centre of the St George's Cross, with sheaves of arms in the four corners of the flag, all of which appear to be allusive to the office of their colonel.

So far as I know the gun as the badge of office of the master is the first pictorial evidence that we possess of its use by the office. The Royal Fusiliers (Dartmouth's) were known of course as the The Ordnance Regiment and were formed in imitation of their French counterpart, their function being to guard the Train of Artillery which accompanied the field army and which at the time was supplied by civilian contractors and manned by civilian tradesmen.

It would seem that the shield design was adopted possibly in the 1680's and that Perrin may be right when he says that it was the seal or badge of the office.

There is, in the Tower of London, a board from the barge of Marlborough, then Master General, which bears a carved representation of the 'Arms' of the Board and in its decoration appears something which might be an arm holding thunderbolts out of a mural crown; this latter has been said to be proof of adoption of what came to be later the crest of the Board, though, as far as I can discover, there is no other proof that this crest was in use before 1806, when it was first granted by the College of Arms.

Whatever date the 'arms' were adopted, it is almost certain, in my opinion, that they were designed for a seal and not as a coat of arms. As a seal they would of course be represented without tinctures and it is a fact

that in the earlier representations of them, during the seventeenth century, when, for decorative purposes, they were given colour, these colours varied from one period to another; thus, although red was commonly used for the tincture of the field, the chief was variously shaded yellow (for gold) or white (for silver) and the cannon-balls, though usually black, are in some illustrations depicted as either white or blue: the only consistency lay in the fact that the guns were invariably yellow or gold. The colour of the field was finally determined by the grant of arms in 1806, which laid it down as blue. It would appear, from evidence, that the colours were, until 1806, apochryphal and were the product of the imagination of the artists in adopting a seal or badge design for use as arms. Proclamations of 1702 and 1707 confirmed the use of Red Jack bearing the seal of office, but the King's Regulations of 1731 make a variation by specifying that the badge 'shall be described in the fly of the ensign', instead of 'in the other parts of the said Jack' as previously mentioned.

Royal licence was granted for the use of arms by the Honourable Board of Ordnance on 19 July 1806 and the College of Arms, by the Earl Marshal's Warrant of 30 July 1806 blazoned these arms as 'Azure 3 Field Pieces in Pale Or, on a Chief Argent 3 Cannon Balls Sable. Crest—Out of a Mural Crown a Dexter Hand holding a Thunderbolt all proper'; together with the motto *SUA TELA TONANTI*. 'Supporters—On either side a Cyclops, in the exterior hand of the Dexter a Hammer, in that of the Sinister a Pair of Forceps resting on the shoulder of each respectively all proper.' Apparently there was some technical deficiency in registration of the Arms and a new Earl Marshal's Warrant was issued on 12 May 1823, the actual date of the grant being 16 May 1823, which repeated the grant of arms in 1806.

In the illustration accompanying the 1806 grant, the mural crown was depicted as argent, but was not specified as such in the blazon. The 1823 grant regularized the matter by blazoning it as argent.

An interesting feature of the 1806 grant lies in the preamble, which confirms and licenses the arms which are 'in use by the Board' and though the rest of the wording is somewhat ambiguous, it could imply that the crest had similarly been in use previously. There is, however, no mention of any earlier use of supporters, which would appear therefore to date from 1806.

The arms and supporters are particularly appropriate. The cannon and cannon-balls are self explanatory; in classical mythology, Vulcan was the Roman god of fire, being son of Jupiter and his sister Juno. The Cyclopes were a race of shepherds of gigantic stature with a single eye placed in the centre of the forehead.

Vulcan was the armourer of the gods and the Cyclopes, under their chief Polyphemus, assisted him at his forge on Mount Etna.

Thus we have the winged thunderbolts of Jupiter, the Cyclopes and the hammer and tongs of their trade.

I have been informed that there is evidence to show that the ordnance depot at Weedon flew the Royal Standard and the Union Flag besides about the period 1836, which is curious, to say the least. An illustration in *Norie's Book of Flags*, of about the same period, shows the ordnance flag as being square, with the arms throughout as in a banner; that is, the three cannon with three balls in chief.

I hazard the guess that this was the flag of the Master General himself. There are, unfortunately, no reliable flag books before the nineteenth century and the designs in some of the illustrations, and especially the 'tricking' of the tinctures, is often unreliable.

Bowle's book of the late eighteenth century gives the 'ordnance flag as having the arms/badge of the Board in the fly of a Red Ensign; the arms being a red field with a yellow chief'.

Norie (new edition, 1838, hand painted in colours), in his banner-flag, previously mentioned, correctly gives the arms as having a blue field but shows a yellow chief with three *blue* cannon-balls.

The Board apparently flew the Union Flag and not their Ensign on their stores establishments. The modern distinguishing flag of an (Army) Ordnance Depot is of course a blue pennant with a red ball thereon.

As already mentioned, the Office of the Master General of the Ordnance was terminated in 1855, and its functions were taken over by the War Office.

Regulations of 1844 had directed that the seal or badge of the Board should be placed in 'the centre of both Ensign and Jack', but, so far as I can discover, there is no illustration of these flags before one in the *Illustrated London News* of 1858.

In July 1864, the Ensign of the Ordnance was changed from red to blue and the Red Jack became a Union Jack with a white border, both bearing the badge of office as before.

The white-bordered Jack was altered by Addenda to Regulations in 1868 and was directed to be blue, like the Ensign. This Jack was a small 'square' flag, the Ensign being oblong in the proportions of 2 to 1.

The badge in the fly of the Ensign, having itself a blue field and being on a blue flag, was fimbriated with a gold rope-cable design, though sometimes a red border was depicted instead, which was of course an heraldic anachronism, since there was a colour on a colour. Some of these wrong flags were obviously in stock since, even so late as 1944, the incorrectness of flying a

flag with a red border to the shield was pointed out to the Inspectorate of Stores of the R.A.O.C.

This blue 'Ordnance' ensign was in common use by W.D. vessels.

The Ordnance of the Navy continued to be directed by the (Army) Ordnance Committee, on which two naval members served, until 1886, when it came under the jurisdiction of the newly created Director of Naval Ordnance, though this was not formally established until 1891, and Military Ordnance officers continued to serve in the R.N.O. Depots at least until 1920.

The Board of Ordnance is particularly notable in the army as being the direct parent of the Royal Artillery and the Royal Engineers and their derivative corps. The Ordnance services in the army were at first served by commissioned civilians who were succeeded by the officers of the Military Stores Department in 1859, a body which survived under various titles until 1896 when it was given the name of the Army Ordnance Corps, and the old shield of the Board of Ordnance was granted to them as their badge. The Corps became the Royal Army Ordnance Corps and it officially adopted the old motto of the Board, *SUA TELA TONANTI* (to the thunderer his weapons), in November 1918. In 1891 the Naval Ordnance adopted a blue ensign, with the Union Flag in canton; in the fly was the old arms of the Board on a shield surrounded by a yellow rope whilst under the Union appeared a white fouled anchor.

The Submarine Miners, originally a branch of the Royal Engineers, adopted the crest of the Board—the mural crown with a hand holding winged thunderbolts—as their badge and as such used it on the Ensign of their vessels until their functions—and vessels—were taken over by the Admiralty in 1904.

Various corps and units of the army have used parts of the arms of the Board as badges from time to time, among which can be instanced Tyne Electrical Engineers, who added an arrow to the winged thunderbolt and mural crown crest. This crest was also in use by the 26th Field Company, Royal Engineers, on vehicles and camp flags, and by Edinburgh Fortress Engineers (T) during the late war, on their cloth patch, whilst army blacksmiths, armourers and others have for their trade badge the crossed tongs and hammer of the Cyclopes.

In 1946 Field-Marshal Lord Montgomery, then C.I.G.S., adopted the shield of arms of the old Board, mounted on a red and blue oblong, as the distinguishing badge of War Office Military Staff. These arms had been adopted by the Army Council on its formation in 1904 and in 1905 approval was given for them to bear these arms on the centre of their Union flag as a distinguishing badge.

Authorities:

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 Perrin, Norie and Bowle's books of Flags
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 and many other sources

APPRENTICESHIP IN THE MARITIME OCCUPATIONS AT IPSWICH, 1596-1651

By John Webb

AMONG the records of the Ipswich Corporation is a bulky Elizabethan rate book which, between 1596 and 1651, was also used by the town authorities to record the official enrolment of all indentures of apprenticeship. The long, unbroken series of entries¹ contains many details about those boys whose training in Ipswich was formally acknowledged by the baliffs, and since the prosperity of the Suffolk town was largely dependent upon the handling, manning and building of ships, it is not surprising that out of the 381 apprenticeships recorded, no less than 296 concerned maritime occupations. By far the most important trade was that of mariner, which attracted 203 boys. A further 26 began training as sailors, 16 as fishermen, 49 as shipwrights, and 2 as caulkers.²

A careful analysis of the indentures enables the table shown overleaf to be drawn up to show the origins of these boys.

¹ R(ate) B(ook), ff. 108v-167r, 170v-233r, 256v-268r, 273v-278r, 311r-326r.

² There was not always a clear-cut distinction between one trade and another. Thus a shipwright took a boy to be trained as a shipwright *or* mariner, but it is evident that the former craft was intended because shipwright's tools were to be provided at the end of the apprenticeship (R.B., f. 176r). The terms 'mariner' and 'sailor' have been kept separate here, but it is impossible to determine from internal evidence if there was any real difference. On one occasion, for example, a master was described as a mariner and on another as a sailor, and he trained boys in both occupations (R.B., f. 129). It should be noted, however, that a mariner's apprentice was sometimes promised tuition in 'the art or science of navigation and sailing', and in the later years of the period a boy was often to be taught the trade of 'mariner or navigator'. No more boys were apprenticed to sailors after 1628.

	Ipswich	Elsewhere in Suffolk	Elsewhere in England	Not known
Mariners	81	82	37	3
Sailors	9	8	8	3
Fishermen	6	6	4	1
Shipwrights and Caulkers	14	28	8	1

It is seen that approximately four-fifths of the recruits were drawn from Suffolk, particularly from Ipswich itself. The remainder came from sixteen widely scattered counties. They were Norfolk (13), Essex (12), Northumberland (12), Yorkshire (4), Cambridgeshire, Durham, Leicestershire, Sussex (2 each), Bedfordshire, Devon, Kent, Lincolnshire, Rutland, Surrey, Westmorland, and Wiltshire (1 each). Although some of the boys came from distant parts of England, their homes were often near the sea or a navigable river, and they probably travelled to Ipswich by ship rather than by road. It was undoubtedly the active coasting trade, for example, that was responsible for a dozen boys being brought down from the Tyne to the Orwell. Recruitment from outside Ipswich would probably have been more extensive but for the town authorities, who, in 1598, mindful of the need to restrict the freedom of the borough in the interests of the inhabitants, ordered that before an outsider could be apprenticed to an Ipswich craftsman, licence had to be obtained from the bailiffs and five portmen, and at the end of his training he was not to be admitted to burgess status.¹

When the social origins of the boys are examined it is seen that nearly a third of the Ipswich-born mariner's apprentices had a maritime background, and another eighth had fathers associated with the cloth industry. The rest came mainly from families engaged in handicraft or trade. A study of those drawn from outside Ipswich shows that twenty-eight were the sons of husbandmen and twenty-three of yeomen. Only eleven had fathers who were mariners. Six were the sons of gentlemen, one came from the schoolhouse at Hadleigh, another from the mill at Combs, and most of the remainder had a background of craft or trade, as did almost all the sailors and fishermen and half of the shipbuilders' apprentices. The other half consisted of the sons of Ipswich seamen and shipwrights, and farmers' boys from the neighbouring countryside. Very few of the lads in any of these occupations were formally apprenticed to their fathers (many of whom were in fact dead), or even, so far as one can tell, to relatives. One of the rare exceptions occurred in 1641 when Edward Clarke and his brother Robert were both bound to their parents on the same day in order to learn the trade of mariner.²

1 Bacon's *Annals of Ipswich*, ed. W. H. Richardson (Ipswich, 1884), p. 395.

2 R.B., f. 275.

Whatever his social and geographical origins, a boy had to live in the house of his master and dame during the whole of his apprenticeship, except, presumably, when he was on shipboard, although this essential part of his training was, surprisingly enough, rarely referred to in the indenture. He was expected to be honest and faithful, to keep all secrets entrusted to him, to stay away from taverns and beerhouses unless specifically sent there on business, and not to leave his master's service without permission. In addition, he promised not to play unlawful games (such as dice and cards), and to remain unmarried during his service. The form of the contract was conventional, although the obligations entered into by the master were usually less stereotyped than those of his pupil. After promising to teach the boy his craft, 'soe farre as the capacitie of the said [] shalbe hable to receyve the same', he usually agreed to provide meat and drink, bedding, and even 'washing and wringing', besides 'all other thinges necessarie for such an apprentice'. He was to keep him 'aswell in sicknes as in helth', and 'for his defalties *and* offences charitablie to correct him'. Clothing, 'boothe lynnene and wollen, hose and shoes', also had to be provided by many of the masters, but as time went on there seems to have been an increasing tendency to leave the buying of this to the apprentice himself, and wages were paid to the youth for the purpose. The actual amounts were carefully recorded in advance, and they increased with the boy's age, so that he might receive 30s. or less in his first year and as much as £3 (but apparently never more) during his last. On one occasion a mariner agreed to provide his apprentice with apparel during the first five years of his training, and then, after fitting him out with three sea-suits and one land-suit, a large coat, six shirts, a dozen neckcloths, six pairs of hose or stockings, three pairs of shoes, a hat, and a 'mullmoth capp', he would pay the boy wages during the remainder of his term, 40s. in the sixth year, 50s. in the seventh, 55s. in the eighth, and £3 in the last.¹

Such payments also seem to have freed the master from the common practice of providing the lad with some 'recompense for his trewe *and* dilligent service' when training had been completed. This gift usually took the form of a small sum of money together with two sets of attire (double apparel), one being for workdays and the other for holy days. In 1603 a master-mariner agreed to buy his lad four sets of clothes 'fitte for the sea' and one 'fitte for the londe'.² This emphasis on working attire is also seen in the occasional provision of seaboots. It was quite common for a young mariner to be given equipment that would be of use to him on board ship. The commonest articles were a sea-chest and a bed. The latter was probably a simple pallet, although there is a suggestion of something slightly more

1 R.B., f. 317.

2 R.B., f. 149r.

elaborate in the 'seabed with the furniture thereto belonging, which one sailor-apprentice was due to receive at the end of his training, together with a chest, a sea-gown, and 40s.¹ Jedion Johnson, a mariner who took one apprentice in 1598 and two others in 1603, provided each with instruments of navigation when service had been completed. On the first occasion he gave 'a crosse *and* a staffe, seacarde *and* a payer of compasses mete for the sea', but thereafter he did not include compasses.² Young shipwrights, like many other newly trained craftsmen, each received a set of tools. In some cases this consisted of an axe, an adze, an auger, a clove-hammer, a pair of clinch-hammers, a hind-saw, and a caulking-iron. Other tools which were sometimes included were a chisel, a mallet, a maul, and wimble.³

The indentures contain little information about the actual training of the lads who entered the maritime crafts, and only occasionally was there the simple, practical provision that the apprentice was to be employed 'for the most parte in voyages behind the seas in forren dominyons'. At the end of his term one mariner was to be sent on 'twoe Newcastle voiages or one Burdex voiage',⁴ but another sailor was the subject of a more complicated arrangement. He was Richard Howe, the son of an Ingatestone glover, and it was agreed that after his six years' training his master, Bartholomew Clifford, would lend him 20s. to be employed in stock 'for everie voyage that the said Richard Howe shall make att the appointem[en]t of the said Bartholl[omew] Clifford into th[e] Est Countrie, Fraunce, or any other place beyond the seas, after that the said Richard canne doe the labor belonging to a sayler aswell as the comen sort of saylers *and* take the wages like unto them'. At the end of each voyage Howe was to repay the 20s. that had been lent to him. In the case of a shipwright's apprentice a practical training at sea was sometimes mentioned. In 1609 Thomas Brunning (or Browning) of Woodbridge agreed that Roger Medowe should spend the last two summers of his service on shipboard, and some years later Abraham Ellberry promised to allow his lad to get practical experience afloat for two and a half years of his term.⁵

The age of a lad when he was apprenticed was never included in the indentures under examination here, but it can probably be calculated by assuming that training ended at the age of twenty-four. The length of the term varied considerably, and although it might be as much as twelve years, the following table shows that a seven years' service was most common.⁶

¹ R.B., f. 172v.

³ R.B., ff. 136r, 153v, 215r, etc.

⁵ R.B., ff. 133v-134r.

² R.B., ff. 119v, 126.

⁴ R.B., f. 158v.

⁶ R.B., ff. 158r, 263r.

⁶ This was the minimum period of technical training laid down by the Statute of Artificers (1563). Some of the short terms included in the table may be the result of re-apprenticeship.

Years	Mariners	Sailors	Fishermen	Shipwrights and Caulkers
12	1	1	1	3
11	3	0	0	0
10	16	2	2	0
9	28	0	2	5
8	33	5	3	6
7	66	12	5	32
6	18	2	1	0
5	19	1	0	1
4	4	2	1	0
3½	1	0	0	0
3	0	0	0	1
Until 24 years old	14	1	1	3

The 203 young mariners referred to in these indentures were apprenticed to 104 masters, many of whom are mentioned once only. Certain families, such as the Lowes, seem to have been far more active than the majority. John and his two sons took thirteen apprentices between 1600 and 1613. Daniel Bowle was master to five boys in the period 1634-37. Most of the fishermen, like the sailors, took one apprentice only, although James and John Seager are seen to have become the masters of nine boys in the first decade of the seventeenth century.

For many years a vigorous shipbuilding industry had been carried on along the Orwell. Ipswich craftsmen had gone to Woolwich in King Henry VIII's reign to help in the building of the *Henry Grâce à Dieu*. Now, in the late sixteenth and early seventeenth centuries, under the direction of such families as the Coles, Brunnings, Fords and Wrights, who took advantage of the growing demand for more vessels and the favourable position of their yards, Ipswich craftsmen sent many fine examples of their skill down the Orwell at the behest of owners who lived at places as far apart as Newcastle and Sandwich. Above all, the banks of the Orwell became the shipyard of London. In 1626 it was reported that twelve ships a year had been constructed at Ipswich since the late 1590's, and the industry continued to be carried on into the reign of Charles I, although perhaps somewhat diminished in importance, for at least fifty-nine vessels came from the Orwell yards between 1625 and 1638.¹ As far as the training of shipwrights was concerned, the Fords were by far the most active family. Saphorie took only three apprentices during this period (in 1624, 1625 and 1632), but John accepted at least sixteen, five of them in 1629, four in 1630, three in 1631, and one in each of the years 1625 and 1632-34. Thomas Brunning and Thomas Cole (who each took three lads in the first

¹ *Victoria County History of Suffolk*, Vol. II, pp. 211, 217-18.

decade of the century), and John Lion, were all said to be 'of Woodbridge', and there was certainly a strong connexion between the shipbuilding industries in these neighbouring places. It was Brunning who built some of the large vessels used by the East India Company. These were not the only masters who lived or carried on their businesses outside the borough. Half the fishermen came from the nearby village of Woolverstone. Six of the master mariners were non-resident, two of them, John Hudson and John Rawlings, being settled at London.

By custom a master had to see that the indentures of his apprentices were officially enrolled within a year and a day at a cost of 6*d.* (4*d.* before 1610), otherwise the boys could not take up their freedom at the end of their training.¹ During the early seventeenth century some of the masters seem to have been surprisingly lax in this respect, despite the threat of a 20*s.* fine, and it is not uncommon to find examples of boys being bound for several years before their indentures were properly enrolled. In an age when the death-rate was high, many of the boys and masters must have died before training had been completed. To avoid the drawing up of new indentures, an ageing or ailing master sometimes nominated another craftsman to take over if he himself should die. John Lowe chose his son William, and Thomas Cole of Woodbridge a fellow shipwright named Cave.² Very often the master's wife was specifically referred to in the official contract, probably for the same reason. Sometimes a master was unable to continue the responsibility of an apprentice's training, and so the youth was officially bound a second time.

On occasion the authorities stepped in to enquire into allegations that the obligations of a particular indenture were not being honoured. In 1638 there was a complaint from John Bumpsted, the apprentice of Timothy Cleveland. It was said that the master did not supply 'necessarie *provision and worke*' for the boy, and the justices, deciding that Cleveland was in the wrong, 'ded thereuppon aver *and* agree that the said John Bumpsted shold be dischargd of *and* from his said apprenticeshood *and* service'.³ A year later another boy was freed from his apprenticeship because it was found that his master had been guilty of 'not payenge his said apprentice his wages agreed uppon by his indenture for the fyndinge him *aparell*', and he had also neglected to provide him with 'necessarie meate *and* drinke'.⁴

¹ Bacon's *Annals*, pp. 178, 195, 315, 444.

³ R.B., f. 265v.

² R.B., ff. 116r, 174v.

⁴ R.B., f. 274r.

THE *CARREIRA DA INDIA*, 1650-1750

By Professor C. R. Boxer

THE *Carreira da India* was the term used by the Portuguese for the round voyage made by their Indiamen between Lisbon and Goa from the time of Vasco da Gama until the substitution of sail by steam. The functioning of the *carreira* during the first century and a half of its existence, and particularly during the years 1580-1650 when the shipwreck rate was alarmingly high, has been described and discussed in some detail elsewhere.¹ It is the object of the present article to survey the conditions obtaining in the *carreira* during the years 1650-1750, and to compare them with those of the earlier period.

A long series of shipwrecks, *arribadas* (abortive voyages), and other maritime mishaps had reduced the once great and glamorous prestige of the Portuguese Indiamen to a very low ebb by 1650. The poet (or poetaster as John Dryden dubbed him) Richard Flecknoe, who had made a delightful voyage to Brazil and back in 1648-49, was offered a passage to India with the viceroy Count of Aveiras in the next year. After only slight hesitation he turned this down, observing that 'not one Portugal ship of three returns safe from that voyage, whilst not one in ten of the Hollanders ever mis-carries, the doubling of the Cape of Bonna Esperanza being only dangerous at some seasons in the year, which seasons they never avoid (by their own confession) so unwise men, or so ill mariners are they, not better to know to time their voyage or trim their ship'.² Flecknoe's caution was thoroughly justified, for of the five sail with which the viceroy Count of Aveiras left Lisbon on the 21 April 1650, none reached India that year, and the viceroy died of fever on the East African coast. The galleon *São Francisco* was forced ashore with great loss of life by three English warships from the Parliamentary Fleet under Blake and Popham which was blockading the Tagus. The galleon *Nazaré* 'went and put into Angola, thinking it was

1 J. Duffy, *Shipwreck and empire. Being an account of Portuguese maritime disasters in a century of decline* (Harvard University Press, 1955), and review of this work in *M.M.* May 1956, pp. 173-5; C. R. Boxer, 'The naval and colonial papers of Dom António de Ataíde, 1567-1647' (*Harvard Library Bulletin*, Winter 1951, Vol. v, pp. 24-50); 'An introduction to the História Trágico-Marítima', 56-page reprint from the *Miscelânea de Estudos em honra do Professor Hernâni Cidade* (Lisboa, 1957); *The Tragic History of the Sea, 1589-1622* (Hakluyt Society ed., II Series, Vol. cxii, Cambridge, 1959), pp. 1-30; articles in the *M.M.* Vol. xxv, January 1939, pp. 23-34, and *M.M.* Vol. xxvi (October 1940), pp. 338-406.

2 R. Flecknoe, *A Relation of Ten Years travels in Europe, Asia, Affrique and America* (London, 1656), p. 101.

already in the Indian Ocean, for such was its pilot's ineptitude', and the three other vessels were forced to winter at Mozambique. To match the misfortunes of the outgoing fleet, the homeward-bound galleon *Santo André* was forced by stormy weather into the Bay of Vigo, where she was captured by the Spaniards.¹ The cup of Portugal's maritime disasters was indeed full to overflowing; for apart from the damage done by Blake's blockade of the Tagus and his interception of the Brazil Fleet in 1650, an unseasonable hurricane which struck the River Mandová in April 1648 had sunk or driven ashore all the shipping on which Goa depended for its existence.²

Flecknoe thus had every reason to congratulate himself on having declined the Count of Aveiras' offer of a passage to Goa; but had he waited another year or two, he would have had no cause to regret taking a passage, for 1650 marked the nadir of the *carreira*. The Indiamen which sailed in 1651-55 made almost uniformly prosperous voyages, though one straggler was taken by the Dutch off the north-east coast of Brazil in 1653. The outward-bound fleet of 1655 took just under five months (23 March-21 August) for a voyage which usually lasted about six, and only twenty-five people died of accident or disease out of some 1700 who were embarked. This was a remarkable contrast with the fleets of 1629-34, when out of 5288 soldiers who embarked at Lisbon for India, only 2495 reached Goa alive. Finally, the provisions and drinking-water on board the ships of 1655 were sufficient and to spare in both quality and quantity; although these vessels never touched anywhere for refreshment and supplies between their departure from Lisbon and their arrival at Goa.³

Even though the shipwreck rate in the *carreira* after 1650 never reached the disastrous depths it had plumbed before that date, the India voyage was often a difficult and hazardous one. The chief causes of the loss of men and ships continued to be what they had always been, overcrowding on the outward voyage and overloading on the homeward run, combined with sailing too late in the season from either Lisbon or Goa. Ships which left

1 Simão Ferreira Paes, *Recopilação das famosas armadas Portuguesas que para a India foram, 1497-1650* (Rio de Janeiro, 1937), pp. 149-51; Arquivo Histórico Ultramarino Lisboa (hereafter cited as AHU Lisboa), 'Angola, Caixa 1, papeis de 1650'; narrative of the voyage of the Count of Aveiras in *Ethnos*, Vol. 1 (Lisboa, 1935), pp. 275-83.

2 *Relacion de las grandes perdidas de naos y galeones, que han tenido los Portugueses en la India Oriental* (Madrid, 1651); A. Botelho de Sousa, *Subsídios para a história militar-marítima da Índia, 1585-1669* (4 vols., Lisboa, 1930-56), Vol. IV, p. 434.

3 The successful voyage of the 1655 fleet is related in the *Relation du voyage du P. Joseph Tissanier S. J.* (Paris, 1663), pp. 14-33. The figures for the 1629-34 fleets are taken from an original certificate by Pedro Barreto de Rezende, d. Goa, 20 November 1634, in the writer's collection.

Lisbon late were usually compelled to 'winter' in the island of Mozambique, where malarial and bilious fevers were endemic, and the emaciated passengers and crew died like flies. Ships which left Goa late ran into stormy weather off the coast of South East Africa, or in the 'roaring forties', not a few being lost on the 'Wild Coast' of Natal. This was particularly the case with the lubberly four-deck carracks which were so much the vogue in the *carreira* during the years 1580–1650, and whose structural defects were aggravated by inefficient careening and by reckless overloading at Goa.¹

The *Nãos da carreira da India*, or 'Great ships of the India Voyage', took out to India chiefly soldiers and specie, together with a little coral and assorted European goods of no great value. They were not deeply laden as a rule, and the wine- and water-casks needed for the 600 or 800 men on board served as ballast. Their return lading, on the other hand, comprised bulky cargoes of spices, saltpetre, indigo, hardwoods, furniture, silks and cotton piece-goods. The holds were filled to capacity with the spices and saltpetre, while crates and packages of the other commodities were piled so high on the decks that a man could only make his way from the prow to the poop by clambering over mounds of merchandise. Boxes, bales, and baskets of assorted goods were lashed outboard to projecting planks and platforms, or were slung suspended over the ship's side. Such chronic overloading and irregular stowage was, of course, strictly forbidden by the Crown *regimentos*, or standing orders, but these regulations were often flagrantly ignored.²

Virtually all deck and cabin space above the hold was the perquisite of some officer or member of the crew, who could sell it with the accompanying privileges to the highest bidder. The most coveted of these privileges comprised the *caixas de liberdade* or liberty-chests, of a standard measurement, in which those entitled to such chests were permitted to bring back from Goa certain spices and other goods, wholly or partly duty-free. The value and number of these *caixas de liberdade* were graduated in a sliding scale from Captain-major to cabin-boy. They were originally made to a standard measurement of 6 *palmos de vara* in length by 3 in height by 2½ in breadth. In 1575 this was modified to 5 *palmos de vara* (about 4 feet) in length by 2½ in the other two dimensions. This size lasted for the duration of the *carreira*, so far as I am aware.³

By the turn of the sixteenth century the system of liberty-chests and free

1 C. R. Boxer, *The Tragic History of the Sea, 1589–1622*, pp. 25–6, 55, 114–17, 191, for some typical examples.

2 *Arquivo Portuguez Oriental* (8 vols., Nova Goa, 1857–76), Vol. III, pp. 184, 722–3.

3 *Alvará* of 20 February 1575, in Damião Peres (ed.), *Regimento das Caças da India e Mina* (Coimbra, 1947), pp. 147–8.

deck (or cabin) space had become grossly abused; and the Crown was defrauded of much of its dues by the laxity with which the regulations restricting their use to *bona fide* officers and seamen, or to their nominees, were enforced. Periodic suggestions were made from 1622 onwards that the system should be abolished altogether, and the derisory rates of pay raised to adequate levels instead. After much hesitation, the Crown endeavoured to do this in the years 1647–48, at the same time substituting professional seamen for the blue-blooded *fidalgos* who were normally entrusted with the command of Indiamen, even though they 'had never seen any water other than that of the Tagus'.¹ This innovation proved so unpopular that it had to be abandoned after two years' trial. The old system was restored with minor modifications in March 1649, and three years later the last of these restrictions were abolished and the former privileges and perquisites were restored in their entirety.² The preamble to the decree of 11 March 1652, which marked this capitulation by the Crown, observed that the chief reason for this step was that the sailors of the *carreira* depended on the sale of their allotted deck-space and liberty-chests for their livelihood. Without this resource they could not borrow the money needed to support their wives and families during the breadwinners' absence from home. The abolition of these *liberdades*, as they were called, threatened to reduce the recruiting of seamen for the *carreira* to vanishing point. Contributory causes were the refusal of the *fidalgos* and soldiers to serve under professional seamen, since sailors were regarded as ranking far below soldiers in the Iberian social hierarchy, and the inability of the Crown to find sufficient cash to pay the proposed higher rate of wages.³

The decree of 11 March 1652 enacted that the captain-major was entitled to fifteen liberty-chests, which had been his allowance since 1615, though a century earlier it had been fixed at four. His other perquisites for the homeward voyage included twelve slaves, 300 *quintals* of blackwood, 100 *quintals* of lac-dye and thirty of camphor, to say nothing of a dozen servants ranking as men-at-arms, each of whom was allowed, apart from his pay, a liberty-chest and twelve fardels of cinnamon. At the other end of the scale, each sailor was allowed one liberty-chest and twelve fardels of cinnamon, while each grummet (apprentice sailor) was allowed one fardel

¹ The remark was made by Padre António Vieira S.J. (1608–97), but though I recall the wording, 'que nunca viu mais agua que a do Tejo', I have mislaid the reference.

² *Alvarás* of 22 March 1649 and 11 March 1652, in D. Peres, *Regimento das Casas da India e Mina*, pp. 149–59. Cf. also S. Ferreira Paes, *Recopilação*, pp. 143–8.

³ Cf. the protest of the Conselho Ultramarino (Overseas Council) against the abolition of the liberty-goods and the proposed substitution of *fidalgos* (gentlemen) by professional seamen, 2 March 1647, in AHU Lisboa, 'Consultas Mixtas', Cod. 14, fls. 22–4.

of liberty-goods and ten fardels of cinnamon. The fardel of cinnamon was fixed at a maximum weight of one *quintal*, and in 1646 the Crown had brusquely rejected the viceroy's request that the ordinary seaman's allowance of cinnamon should be raised to two and a half or even to three *quintals*.¹ In 1658 the last Portuguese stronghold in Ceylon was taken by the Dutch, and cinnamon, which grew only in that island, was no longer available for the seamen's *liberdades*. Not until 1664 did the bureaucrats at Lisbon induce the Crown to promulgate an order that henceforth the sailors of the *carreira* could bring home (under certain conditions) pepper and other spices instead.²

Under the regulations of 1652, some of the spices and goods brought back in the authorized *liberdades* were declared freight and duty free, but others paid either the full freight and/or duty, or else a lower rate than the merchandise belonging to unprivileged passengers and merchants. For example, of the 300 *quintals* of blackwood allowed the captain-major, only 100 were freight-free, and he had to pay freight for the remaining 200 and duty on all 300. Similarly, whereas both the pilot and the second pilot (*sota-piloto*) were allowed to bring back two slaves each, the former had to pay freight (but not duty) for his two, whereas those of the *sota-piloto* were both freight and duty free. The actual contents of the liberty-chests were for the most part duty free, and the officers and seamen were allowed a rebate of some sort in the *Casa da India* (India House) on such items as were dutiable.³

The Crown regulations stressed that only experienced mariners should be entered as able seamen for the India voyage, but they were seldom available in sufficient numbers. As early as 1505, the captain of an outward-bound Indiaman found that his raw and rustic crew could not distinguish between starboard and port until he tied a bunch of onions to one side of the ship and a bunch of garlic to the other, ordering the helmsman to 'onion' or 'garlic' the helm. Such makeshift seamen as survived a couple of voyages to India presumably became 'old salts', but throughout the three centuries of the *carreira* complaints abounded that tailors, cobblers, lackeys, ploughmen and 'ignorant boys' of all kinds were entered as able seamen, gunners, and even (so it was alleged in 1652) as pilots.⁴ This last seems hardly

¹ Crown to viceroy, 10 March 1646 (B.M. Add. MSS. 20877, fl. 54). The *quintal* was an Indo-Portuguese weight of 130 lb. (avd.) slightly larger than a hundredweight. The Indo-Portuguese *fardo* (fardel) was generally of 42 lb. (avd.), though the term was also used (as here) for a bundle or package.

² *Alvará* of 14 March 1664, in D. Peres, *Regimento das Caças da Índia e Mina*, pp. 160-1.

³ *Alvará* of 11 March 1652, *ibid.* pp. 154-9.

⁴ *Arte de Furtar, Espelho de enganar, theatro de verdades, composta no anno de 1652* (ed. Lisboa, 1744), pp. 39-40. Ascribed on the title-page to Padre António Vieira S.J., this work was, in all probability, really written by his contemporary, Dr António de Sousa de Macedo.

credible until we recall the well-attested fact that the pilot of the galleon *Nazaré* in 1650 made the West African port of Luanda under the impression that he was off the coast of Malabar.

It may, indeed, be doubted whether any maritime nation had a sufficient supply of experienced seamen during the century with which we are dealing. The British Navy was largely dependent on landsmen secured by the press-gang, and the Dutch Navy contained a considerable proportion of Scandinavian and German seamen, as did the ships of the Dutch East and West India Companies. Harbours along the Portuguese coast are comparatively few and far between, and there was no large nursery of seamen such as the Basque and Cantabrian ports often provided for Spain. The *carreira* was therefore constantly struggling with recruiting difficulties, especially as the wastage was very high. Sometimes men paid to be entered as sailors aboard Portuguese Indiamen; but at other times they had to be forcibly embarked and kept aboard in chains, in order to prevent their deserting before the ship weighed anchor in the Tagus.¹

During the union of the Castilian and Portuguese Crowns from 1580 to 1640, the Spanish Armadas and West-India *flotas* often contained a relatively high proportion of Portuguese seamen, perhaps because they operated in waters nearer home than the Indian Ocean, and this drain aggravated the difficulty of securing sufficient crews for the *carreira*. Ever after the separation of the two Crowns, the manning problem remained a difficult one, and the Portuguese sailors displayed an understandable preference for the shorter and easier voyages to Brazil. Due to these facts, and to the high wastage from disease in the East, the Portuguese Indiamen, like their Dutch and English contemporaries, often had a fair proportion of Asians among their crews, at any rate for the return voyages. Portuguese ships operating in the Indian Ocean and the China Sea contained an even higher proportion of Asian and African seamen; and though successive viceroys deplored this practice they were forced to continue it. A squadron of three frigates and a galliot which left Goa for the relief of Mombasa in November 1698, carried 126 white and 376 coloured foremast-hands and gunners.² Forty years later the viceroy reported to the Crown: 'the total number of European seamen now actually in Goa, including officers, sailors, gunners, pages and grummets, scarcely amounts to 120 men, excluding the sick; all or nearly all of whom are necessary to man a single homeward-bound Indiaman, particularly in this monsoon at a time when no Kaffirs have come from Mozambique and there is a shortage of

¹ Cf. the instances adduced in C. R. Boxer, *The Tragic History of the Sea*, pp. 9–11.

² *Alardo* of the expedition to Mombasa, d. Goa 13 December 1698.

them here, for it is on them that we usually rely for service as deck-hands.¹

If under-manning and overloading were the chief problems on the homeward voyage, overcrowding and the resultant spread of disease were the bane of most voyages to India. An outward-bound Portuguese Indiaman with a crew of 120 men and boys, which was the regulation number, usually carried 500 or 600 soldiers sent out for service in the East. For most of the century with which we are dealing, these men were not veterans but raw recruits taken from the streets, the fields, or (more commonly) the jails and lock-ups of Portugal. Their poor physique and extreme youth were the theme of continual complaints, many of them being boys in their early 'teens; for children of under thirteen were often included, despite official insistence on this as the lowest age-limit.² Moreover, those who had been held for some time in the *Limoeiro* (the Lisbon equivalent of Newgate prison) were often in a filthy and verminous condition even when they were not (as they usually were) suffering from some infectious disease. They were generally herded together on one deck³ and were totally ignorant of ship hygiene. Under these circumstances, typhus, typhoid, dysentery and other faecal-borne diseases spread with great rapidity. The sufferings of the sick were aggravated by the salty nature of most of the rations, by the tropical heat of the Gulf of Guinea, and frequently by the inadequate supply of drinking water and the lack of medical attention. As an Indiaman might easily be six or seven months at sea without making landfall—save in the fever-stricken island of Mozambique—a mortality of over 50 % of the personnel on board was nothing unusual.

The *fidalgos* who went out to India were usually rated as soldiers for the voyage, though the wealthier and more important among them would have separate accommodation from the recruits on the troop-deck. Apart from the soldiery, there would normally be a number of missionaries on board, ranging from about two or three to as many as thirty; and also, perhaps, a few merchants and women. The feminine element was never numerous, and during the century with which we are concerned, hardly any women

1 Viceroy to Crown, 16 December 1738, in P. Pissurlencar (ed.), *Assentos do Conselho do Estado da Índia, 1696-1750* (Goa, 1957), p. 470. The Spanish Manila galleons likewise made great use of Filipino seamen (W. L. Schurz, *The Manila Galleon* (New York, 1939), pp. 97, 210-12). For the dependence of English East-Indiamen on Lascar and Chinese sailors during the Revolutionary and Napoleonic wars see C. N. Parkinson, *Trade in the Eastern Seas, 1793-1813* (Cambridge, 1937), pp. 213-17.

2 *Carta régia* of 13 March 1637, in B.M. Add. MSS. 20875, fls. 14-15.

3 '...que no aperto e limitado destrita de hũa so coberta parece impossivel se recolher 400 e 500 homens que vierão em minha Nao', wrote the viceroy after his voyage to Goa in the *São Pedro Gonçalves*, 16 January 1703 (AHU Lisboa, 'Documentos da Índia', Caixa, 38).

went out from Portugal to the East. There were more likely to be some women on the homeward voyage, the wives and daughters of returning *fidalgos* and merchants, but the overwhelming majority of these were Eurasian ladies who had been born and bred in the East. The *Orfãos del Rei*, or Orphans of the Crown, who had been shipped out to India with dowries in the form of government posts for the men who would marry them, were neither numerous nor fecund, and the system seems to have been abandoned during the eighteenth century.¹

Each Indiaman was supposed to carry a qualified physician and a surgeon, together with an amply stocked medicine chest provided by the Crown, but there was a great gulf between theory and practice. There was often only an ignorant barber-surgeon aboard, and the contents of the medicine chest and the delicacies allowed for the sick were apt to be embezzled by the ship's officers. On other occasions, the doctors and nursing-orderlies were afraid to spend much time in treating or ministering to the sick for fear of catching the loathsome diseases from which they suffered. With these drawbacks and his own experience in mind, a viceroy proposed in 1698 that the Crown should arrange for two friars of the nursing order of São João de Deus (St John of God) to voyage in each Indiaman, together with four nursing-orderlies to tend the sick under their supervision. This suggestion was adopted, at any rate for some years, and the friars apparently gave great satisfaction. They were already in charge of the hospital at Mozambique, which likewise received its meed of praise from travellers; and it was suggested that they should take charge of the great Goa hospital from the Jesuits, but this proposal was rejected by the Crown.²

For the first century and a half of the *carreira*, every effort was made by the Crown to prevent Indiamen from calling at Brazilian ports on either the outward or the homeward voyage.³ Outward-bound Indiamen in fact seldom did so, but after the expulsion of the Dutch from Brazil in 1654, it became increasingly common for homeward-bound Indiamen to call at Bahia, or, more occasionally, Pernambuco. At first the Crown made strenuous efforts to discourage this practice. A royal decree of 30 March 1662 reiterated the existing ban on returning Indiamen calling at either Angola or Brazil, save in the case of the direst necessity, and confirmed that

1 For women on board Portuguese Indiamen before 1650 cf. C. R. Boxer, *The Tragic History of the Sea*, pp. 20-21, and the sources there cited.

2 Viceroy to Crown, 15 December 1698, and *consulta* of the Overseas Council, d. 6 February 1700 (AHU, 'Documentos da Índia, 1696-1700', Caixa 37).

3 A. Marchant, 'Colonial Brazil as a way station for the Portuguese India Fleets' (*Geographical Review*, Vol. xxxi, no. 3, July 1941, pp. 454-65), successfully refutes the common idea that these fleets used Brazil as a way-station in the sixteenth century; but he does not realize the extent to which they did so on the return voyages after 1650, as explained below.

ships were supposed to sail direct from Goa to Lisbon.¹ António de Mello de Castro, the viceroy of India, appealed against this injunction on the grounds that such a lengthy voyage, without calling anywhere for fresh water and provisions, bore very hardly on both passengers and crew, being often the cause of mortality among them. The Crown relented to the extent that an amended order was promulgated in January 1666, allowing smaller vessels, such as pinnaces, to call at a Brazilian port when homeward-bound, but reiterating the existing ban on larger vessels doing so.² But these and other orders to the same effect were increasingly disregarded on the plea of stress of weather, or lack of provisions, particularly after the discovery of the rich Brazilian gold-fields in the late sixteen-nineties. Permission for homeward-bound vessels to call at Bahia was finally if reluctantly conceded by the Crown, but only for the purpose of refitting the ship and refreshing those on board. Needless to say, ways and means were found to evade the strict orders against exchanging Oriental goods for Brazilian gold.³

The situation as regards outward-bound Indiamen was rather different. The *regimento* given to João Correia de Sá as Captain-major of the *Nossa Senhora da Ajuda*, on 8 March 1672, gave him permission to call at Rio de Janeiro if he had a lot of sick people on board; and enjoined him to winter there, or else at Bahia, if unable to round the Cape of Good Hope. On no account was he to return to Lisbon if he lost his voyage to India; whereas, in former years, ships which found themselves in this predicament were ordered to return to Portugal. The sailing directions issued for the India voyage were entitled *Roteiro da India Oriental com as emmendas que novamente se fizerão a elle* (Lisboa, 1666). Compiled by the Royal Cosomographer, António de Mariz Carneiro, this rutter was based mainly on the earlier *roteiros* of Vicente Rodrigues (1577 and 1591) and Gaspar Ferreira Reimão (1612), but included certain amendments which had been agreed upon at a meeting of the pilots of the *carreira* at Lisbon in March 1666.⁴ One of these men was an Englishman, 'Roberto Tocar', presumably Robert Tucker. This is one of many indications that what the poet Waller⁵ called

*'that bold nation which the way did show
to those fair regions where the sun doth rise
whose rich productions we so justly prize'*

¹ *Alvarás* of 30 March 1662 and 14 November 1662, in B.M. Add. MSS. 20879, fl. 31, 53-4.

² Crown to viceroy, 8 January 1666, in B.M. Add. MSS. 20879, fl. 105.

³ V. Rau. *Os manuscritos da Casa de Cadaval respeitantes ao Brasil* (2 vols., Lisboa, 1955-8), Vol. I, pp. 220-1, 303-4; Vol. II, pp. 173-5, 356, 366; Arquivo Publico do Estado da Bahia, Salvador, 'Livros de Cartas Regias', Livro 8 (1702-1711), fls. 210-12.

⁴ António de Mariz Carneiro had published a *Roteiro da India Oriental* at Lisbon in 1642, but this was likewise an unacknowledged 'crib' from the 1612 *Roteiro* of Gaspar Ferreira Reimão.

⁵ In a poem celebrating the marriage of Charles II and Catherine of Braganza.

was no longer in the vanguard of the theory and practice of oceanic navigation. Nor did the Portuguese retrieve their position in the ensuing 100 years. The pilot-major of their expedition for the reconquest of Mombasa in 1728 was a Hollander, and their flagship was furnished with Dutch charts of the Indian Ocean for want of accurate Portuguese ones.¹

The instructions issued to João Correia de Sá for the India voyage in 1672 are among the few that have survived, and are worth considering in more detail here.² All those on board his squadron of four sail must go to confession before sailing, and avoid any irreligious or blasphemous behaviour during the voyage. The ships were to be ready for action at short notice, though in the event of foul weather being anticipated near the Cape of Good Hope, the heavy guns could be dismounted and stored below. The armourer was to overhaul the weapons on board every fifteen days; and in favourable weather the recruits were to be exercised in the use of their firearms, care being taken that they did not retain the gunpowder with which they were issued on such occasions. As the soldiers were liable to desert with their arms as soon as they reached Goa, these were to be collected and stored on sighting the neighbouring coast.

If food or water ran short soon after rounding the Cape, the ships could put into the Bay of St Augustine in southern Madagascar for fresh supplies. Otherwise, they were to stop for these at one of the islands off the Swahili coast, such as Zanzibar, where they could rest and refresh their men; but they were to call at Mozambique island only in case of unavoidable necessity. If the Cape was rounded before the end of July, they were to take the 'inner course' through the Mozambique Channel, but if after that date they must take the 'outer course' east of Madagascar.

In order to prevent quarrels between soldiers and sailors, they were to cook their food at separate galleys. The soldiers were to be divided into messes for mutual help and support when sick, 'and particular care must be taken to ensure cleanliness, for it is understood that diseases chiefly proceed from neglect of this'. Nobody was to be allowed to sell their free wine-ration on board, but those who did not drink it were to be given the balance on landing at Goa, so that they could sell it for their support ashore. The purser must render an account daily to the captain of all the rations and provisions consumed, which list must be countersigned by the captain.

¹ António de Brito Freyre, 'Assentos de todas as viagens principiados no presente anno de 1727' (MS. in the Biblioteca Nacional Lisboa, Fundo Geral 485). António de Brito Freyre, who was a participant in this expedition, was an exceptionally competent professional seaman and this journal is a model of its kind.

² *Regimento* dated 8 March 1672 (B.M. Add. MSS. 20879, fls. 255-71). It is followed by another dated 13 March 1673 (*ibid.* fls. 271-89) for Dom Rodrigo da Costa, captain-major of the next India Fleet, which is virtually identical in content.

When any fresh kegs, barrels or casks had to be opened, this must be done in the presence of authorized witnesses, to ensure that the contents were not embezzled by the ship's officers. If any of these witnesses seemed to be on too friendly terms with the steward or the purser, they were to be replaced by others. The doctor, surgeon, and barber-surgeon on board were on no account to charge anything for their services, since they received pay and allowances for these from the Crown.

Particular care was to be taken to avoid the risk of fire from lights burning at night and similar causes. In the event of an outbreak of fire on board during an action with the enemy, only those men previously detailed to cope with such an eventuality were to deal with it. Anyone else leaving their assigned post on the pretext of helping to put out the fire was to be severely punished. The *regimento* deplored that the previous orders about overloading were still being disobeyed, and insisted that they should be complied with. Similar observations were made about the forbidden practice of fraudulently embarking children of under thirteen as soldiers, sailors, or stowaways.

The captain-major had jurisdiction in both civil and criminal offences committed on board. He could inflict punishment up to and including the death penalty, anywhere save in the harbour of Goa, and without appeal or stay of execution, on anyone save only '*fidalgos* or persons dispatched with the command of fortresses, or to fill government posts and offices of justice, or pilots, second pilots, masters and boatswains'. Offenders of these categories must be placed under close arrest and depositions taken of their misdeeds, pending their being handed over for trial on arrival at Goa or Lisbon, as the case might be. However, these restrictions did not apply to mutineers, who could all be disposed of summarily and speedily, by execution if necessary, lest worse befall. The indictable offences included blasphemy, sodomy, reading prohibited books, and using loaded dice or false playing-cards. The rest of this 1672 *regimento* is concerned with the signals, etc., to be used during the voyage and does not differ essentially from common practice in the Indiamen of other nations.

The fact that the captain was usually (and the captain-major almost invariably) a landsman, explains why the pilots had sole charge of the navigation of Portuguese Indiamen for most of the three centuries of the *carreira*. This was also the case with the trans-Pacific voyages of the Spanish Manila galleons where a succession of seasoned pilots (likewise including several foreigners in the eighteenth century) formed the mainstay of the line from 1565 to 1815. The Portuguese India pilots relied principally on a combination of latitude-sailing, dead reckoning, and, above all, on their knowledge of how to interpret Nature's signs. Weather permitting, the pilot measured

the altitude of the sun every day and noted in his journal such natural phenomena as might enable him to check his approximate position in the light of those recorded in the standard *roteiros*. The following entries in a journal, kept during the voyage to India of the *São Francisco de Borja* in 1691, are typical of the care taken to note the various kinds of birds which were sighted:¹

12 June. The signs are black ravens with white bills, *pardelas* and *feijoens*, which are some small birds about the size of doves, chequered in black and white. They are the most beautiful birds of any that we saw during the voyage and they accompanied us by following in the wake of the ship as far as the Island of Saint Lawrence [= Madagascar].

13 June. The signs are seagulls, *feijoens*, black ravens with white bills.

14 June. The signs are white-beaked ravens, *feijoens*, and albatrosses.

Seven years later an Italian voyager aboard the Portuguese Indiaman *São Pedro Gonçalves* noted of a certain species of seagull called *manga de veludo* ('velvet-sleeves'): 'these are found off the region of the Cape of Good Hope and nowhere else. The pilots pay great attention to signs like these, for they are never misled by them.'²

Although the *regimentos* of 1672 and 1673 enjoined all outward-bound Indiamen to avoid calling at Mozambique if they could possibly do so, in point of fact this notoriously unhealthy island-fortress continued to serve as their principal way station. Ships which lost the tail of the south-west monsoon for Goa, and were compelled to 'winter' in this island, suffered particularly severely. The classic case, quoted in the *roteiros* of 1642 and 1666, was that of four sail in the 1608 fleet, which buried 600 men there in a few weeks. The island itself was well cultivated, but drinking water was chiefly obtained from the mainland, and its resources were insufficient to cope with the presence of crowded Indiamen for weeks on end. A clerical passenger in the *São Francisco de Borja* wrote of this island as he saw it in 1691: 'Mozambique is not so repulsive as it is painted, but the Portuguese with their concupiscence and gluttony fill the burial places. Provisions are ordinarily sufficient—luscious oranges and lemons, good sucking-pigs, good cows, figs of Portugal, and I even saw pomegranats there. Wheat and rice come from Senna, and both are excellent, but the local bread is not tasty to those fresh from home.'³

Probably more deadly than concupiscence and gluttony, were the malarial and bilious fevers, which are still endemic. They would account for the high death-rate among transient visitors, which persisted for centuries

¹ 'Viagem que fez D. Fr. Agostinho da Anunciação Arcebispo de Goa Primaz da India Oriental na nao *São Francisco de Borja* o anno de 1691' (B.M. Add. MSS. 20953, fls. 242-53).

² Carlos de Azevedo, *Um artista Italiano em Goa. Placido Francesco Ramponi e o tumulto de São Francisco Xavier* (Lisboa, 1956), p. 22. For a table of 'Land indications from sea-birds' see H. Gatty, *Nature is Your Guide* (London, 1958), pp. 205-8.

³ B.M. Add. MSS. 20953, fl. 251.

despite the admitted excellence of the local hospital, staffed by the friars of St John of God. In 1758 the governor referred to this institution as 'still being what it always has been, a sink of lives'.¹ Few places in the tropics have taken a greater toll of European lives over a longer period, and the Directors of the Dutch East India Company were wise in their day and generation when they authorized the establishment of Van Riebeeck's colony in Table Bay. This fact was duly brought home to the English in their turn, as noted by Andrew Barnard, Secretary to the first English government at the Cape (1799–1803). He pointed out in a memorandum to the home government that if the Cape was returned to foreign power: 'the ships that carry out reinforcements to India, must continue their voyage without touching at any place for refreshments. . . the consequence will be that many lives will be lost from the length of the voyage and the few that survive, will reach India in so weak and debilitated a state, that they will be fitter subjects for a hospital than for the field'.²

Although Barnard was basing his plea for the retention of the Cape on English and not on Portuguese experience of mortality in the India voyages, the death-rate in the *carreira* was, as we have seen, appallingly high; and this for reasons very similar to those which he adduced. If the outward-bound Indiamen tried (as they often did) to sail direct to Goa, the disease-ridden jail-birds on board communicated their ills to all and sundry with dire results. If, on the other hand, the ships stopped to refresh and replenish at Mozambique, their enfeebled occupants succumbed to the prevalent fevers. Nevertheless, there were exceptions to this rule, and some voyages went not merely according to plan, but better than anyone had dared hope at the outset. I have already cited the 1655 voyage in this connexion, and will now consider an even better one—that of the *Nossa Senhora da Conceição* thirty-three years later. This ship left Lisbon on 30 March 1688 with over 500 men on board, including twenty-four Dominican and twelve Jesuit missionaries. One of the latter wrote an interesting account of this voyage, from which the following observations are taken.³

The *Conceição* was said to be 'the best ship which had left for India since many years', and she was certainly a good sailer, as she crossed the Line on 7 May, thirty-eight days after leaving the Tagus, and with all on board in good health. One man had died a few days before, but he was already seriously ill when he embarked at Lisbon. The sole untoward incident which occurred before crossing the Equator, was a brawl which broke out between

¹ Viceroy to Crown, Mozambique, 30 December 1758.

² A. Barnard, autograph memorandum quoted in Maggs Bros. *Cat.* no. 239 (1958), pp. 1–2.

³ 'Relação Hydrográfica da viagem que fez à India a não *Nossa Senhora da Conceição*, o anno de 1688' (B.M. Add. MSS. 20934, ffs. 11–30).

the sailors and soldiers on 21 April, and which only the intervention of the missionaries prevented from becoming a pitched battle. The diarist notes that Mass was said daily until the 18 June, when the service was prevented for the first time by rough weather. In accordance with the usual practice in the *carreira*, the ship's chaplain was a Franciscan friar¹ and the religious on board took turns in organizing sermons, processions, and religious services, especially during Easter week. The *Conceição* doubled the Cape on 10/11 July, when passengers and crew joined in singing the *Te Deum*. They then embraced each other, regardless of social distinctions, and gave the Portuguese equivalent of five cheers (*Boa viagem*, 'Godspeed') to the Cape.

The hard-tack and salty rations were frequently supplemented by fresh fish caught by the crew, and the *fidalgos* and priests among the passengers entertained each other at lavish banquets from time to time. On 9 August they reached Mozambique, where they disembarked fifty fit soldiers for the garrison and one sick grummet (the only invalid on board) for the hospital. They embarked over 200 slaves and a quantity of ivory during their week's stay in this port, after which they resumed their voyage. On the starlit night of 5 September, 'a comedy was performed on the quarter-deck by many men who were very richly dressed. The shrouds served as boxes, and the quarter-deck as a stage, the audience comprising over 500 people'. Incidentally, this is the second reference to a theatrical performance on board a Portuguese ship which I have been able to trace, although there are references to plays being performed in Spanish and English Indiamen much earlier in the same century.²

The coast of India was sighted on 16 September, when the Jesuits sang a *Te Deum* in their cabin, and passengers and crew again forgot all social distinctions and cordially embraced each other. Goa was reached two days later, and as the *Conceição* sailed up the river Mandová, our Jesuit diarist was entranced by the beauty of the tropical scenery. The green palm-fringed shore on both banks of the river for a distance of three leagues was studded with the stone forts, the country mansions (*quintas*), the orchards and gardens of the Portuguese, 'more delightful to the eyes than even Flemish landscape-paintings'. Although there were now some 650 souls

¹ For Franciscan friars as ship's chaplains see Francisco Leite de Faria, O.F.M. Cap., *Fr. Mateus de São Francisco (1591-1663) Capelão-mór do terço da Armada* (Braga, 1955), pp. 6-11.

² A comedy of Lope de Vega was witnessed aboard a Spanish West-Indiaman in 1625 by Thomas Gage, *The English American his travail by sea and land, or A New Survey of the West Indies*, 1648 (ed. A. P. Newton, 1928), p. 17 of the 1946 reprint in the Broadway Travellers series. William Keeling's men in the East-Indiaman *Dragon* are alleged to have played *Hamlet* and *Richard II* at Sierra Leone in September 1608; and though Shakespearian scholars mostly reject this statement, I am inclined to think it may be true. Keeling was a courtier before he was a merchant, and he was connected with Shakespeare's patron, the Earl of Southampton.

on board, including the Negro slaves from Mozambique, everyone was in perfect health. The only death since leaving Lisbon was that of the man who had originally embarked seriously ill. Food and water had been good and plentiful throughout the whole voyage of just over five and a half months, as our diarist noted on 18 September 1688, when the *Conceição* dropped anchor off Goa.

This idyllic voyage may be compared with that made three years later by *São Francisco de Borja*, which is recorded by another anonymous clerical passenger.¹ This man was in the suite of the newly appointed Archbishop of Goa, who was accompanied by the newly consecrated Bishop of Macao. The start was anything but auspicious, as the ship grounded twice on the bar of the Tagus (24 March 1691); and though she was refloated each time without damage, a lot of water-casks and passengers' baggage had to be thrown overboard to lighten her, the archbishop setting an example by being the first to jettison some of his. The weather was pretty rough for the first few days and many of the soldiers and passengers were violently seasick, the Bishop of Macao, Dom João do Casal, suffering longer than most. Throughout the voyage, the archbishop was most active in visiting the sick and in ensuring that the men's quarters were kept clean. By the time that Goa was reached, he had distributed 1070 chickens to the sick and impotent, killing only 100 for the use of himself and his suite. He was also vigilant in seeing that the other provisions and the medicines which the Crown regulations stipulated should be given to the invalids were not embezzled by the ship's officers.

In the course of the voyage, several disputes and brawls occurred between the seamen and the soldiers, and these arguments had to be pacified by the archbishop rather than by the officers. The diarist noted that these recurrent troubles were chiefly due to the misbehaviour of the very young and very raw recruits. 'As these lads got very thirsty and the water ration was insufficient for them, they drank up their wine ration, thinking to slake their thirst; and since they were not used to this, it went straight to their heads and made them act like heedless youths.'² By 24 April there were fifty sick in the *São Francisco de Borja*, but only three in her consort, the *Sacramento*, which was a worse sailer and was left behind by agreement with her officers on 26 May. The invalids were all suffering from intestinal and dysenteric diseases, and the diarist noted that scurvy did not appear throughout the voyage. The first death was recorded on 20 April, but this fatality

¹ B.M. Add. MSS. 20953, fls. 242-53.

² The Portuguese were the most sober race in Europe, 'and never proffer a man drink unless he ask for it', as the German, Mandelslo, noted in January 1639. Portuguese abstemiousness was stressed by nearly all travellers to Portugal.

was the result of an accident. The ship had always two long ropes trailing in her wake from the stern, so that anyone who fell overboard would have a chance of grasping one of them before she got too far ahead.

The *São Francisco de Borja* reached Mozambique at the end of July, and some of the diarist's impressions of this place have been recorded on p. 46 above. I may add that he was most favourably impressed by the condition of the local churches, 'including the humblest hermitages. If God still keeps us in India, it is on account of the splendour, magnificence, and ostentation with which the churches are maintained and the divine service is celebrated. The smallest village church here surpasses those of the best boroughs in Portugal.' The voyage was resumed on 19 August, and Mormugão was reached on 11 September, just before the monsoon broke. The diarist noted that on the last day of the voyage, the captain, first second, and third pilot, all differed in their reckoning, and he added sagely 'the most accurate reckoning consists in keeping the best watch'.

The number of deaths in the *São Francisco de Borja* during this voyage is not stated, but there were evidently very few. This forms a striking contrast with the next outward voyage of the *Conceição* in 1692-93. She left Lisbon in March with 580 souls on board, including a new viceroy, the young Count of Vila Verde, and in company with another Indiaman, the *Nossa Senhora da Ajuda*. Pestilential sicknesses, severe storms, and a disastrous stay at Mozambique, so battered and delayed the *Conceição* that she finally reached Goa under jury-rig on 26 May 1693, with only eighty-four of her original complement alive. Her consort parted company after leaving Mozambique, and was never heard of again.¹ Meanwhile, the *São Francisco de Borja* had made a good homeward passage in 1692, but she was even more unfortunate on her next outward voyage in the following year. She left Lisbon on 25 March, but ran into calms in the Doldrums and eventually found herself off the north-east coast of Brazil. With great difficulty she made her way to the Azores, and then put back to Lisbon, which she reached on 25 September 1693 with thirty-seven dead and 200 sick.²

Such vicissitudes of fortune continued to characterize the *carreira da Índia* for another half century. Usually the outward voyages had the heaviest mortality, as the Indiamen were then crowded with 500 or 600 raw recruits; whereas on the homeward run passengers and crew together seldom numbered more than 250 souls. Moreover, as explained above, the homeward-bound Indiamen usually touched at Bahia, which was a far healthier

¹ J. H. Cunha Rivara, *Chronista de Tissuary*, Vol. II (Nova Goa, 1867), pp. 30-2; Francisco Rodrigues S.J., *História da Companhia de Jesus na assistência de Portugal*, Tomo III, Vol. II (Porto, 1944), p. 172.

² Francisco Rodrigues S.J., *op.cit.* pp. 172-3.

place than Mozambique. An exception to the general rule is formed by the round voyage of the *São Pedro Gonçalves* in 1698-99, of which we have a fascinating description from the hand of the previously mentioned Italian artist, Ramponi.¹ This ship left Lisbon on 25 March 1698 with 516 men, 'including sailors, soldiers, passengers and convicts'. She rounded the Cape on 22 June and reached Mozambique on 25 July with forty-three dead. Here she took on board 310 Negro slaves and resumed her voyage on 15 August, reaching Goa on the morning of 14 September, with only one or two further casualties. She left the River Mandoví on her return voyage on 20 December 1698, with a total of 208 people on board. Among the passengers was the Count of Vila Verde, who had finished his term as viceroy, but who seems to have been something of a Jonah. Though the *São Pedro Gonçalves* left at exactly the right season, she experienced much foul weather before rounding the Cape, and had lost sixty-five persons from disease when she did so on 3 March 1699. By the time she reached Bahia on 23 April, the total number of deaths had risen to 102—almost exactly half of the 208 persons who had embarked at Goa. Fresh men and supplies were taken on board at Bahia; and she left that port with a total of 435 men on 14 July, in company with the homeward-bound Brazil Fleet of sixty-three sail, convoyed by five frigates. The last lap of the voyage was uneventful, and the *São Pedro Gonçalves* dropped anchor in the Tagus on 24 October 1699, having suffered only one more fatal casualty.

Another contrast in the mortality figures is afforded by those of the outward-bound fleet in 1744-45. The *Madre de Dues* and the *Nossa Senhora da Caridade* left Lisbon together on 29 March 1744, and though they parted company in a storm off Madeira a few days later, they fell in with each other again off the coast of Malabar and entered the Mandoví on 19 September. Jail fever and other diseases had prostrated most of those on board these two ships at one time or another; but whereas the *Madre de Deus* which touched at Mozambique had lost about thirty men, the *Caridade* which did not do so had lost over a hundred. Yet next year the *Nossa Senhora da Victoria* reached Goa from Lisbon 'with only six or seven dead, and with everybody on board healthy and fit', after an exceptionally speedy voyage, which included a stay of a few days at Madagascar and another of a month at Mozambique. This state of affairs was attributed, no doubt correctly, to the convicts from the Limoeiro only having been a short time in that prison before they were embarked as soldiers.²

1 Carlos de Azevedo, *Um artista Italiano em Goa* (Lisboa, 1956), pp. 20-6, 32-40. The original Italian manuscript is the property of Sir Bruce Ingram.

2 Joze Freire Monterroyo Mascarenhas, *Epanaphora Indica. Na qual se dá noticia da viagem que o senhor Marquez de Castelo Novo fez com o cargo de vice-rey ao Estado da India* (Lisboa, 1746), pp. 14-17; *Arquivo das Colonias*, Vol. III (Lisboa, 1918), pp. 225-33; *ibid.* Vol. V (1930), p. 97.

The Marquis of Castello-Novo, who was viceroy of Portuguese India from 1744 to 1750, and from whose correspondence the foregoing information is taken, complained that all the four Indiamen which were at Goa in 1745 were too large for economical use in the *carreira*. A similar complaint had been made earlier by António de Brito Freyre, as a result of his experiences in the Mombasa expeditions of 1728-30. He observed that the 64 and 46 gun Indiamen which were then employed were too big for the shallow waters of the Lamu Islands and could not be properly manned from the scanty naval manpower of Portuguese India.¹ This was merely the continuation in another form of the old arguments about the size and tonnage of shipping employed in the *carreira*, which had been exemplified in the lengthy controversy over the respective merits of carracks and galleons. Both types had ceased to be built by the end of the seventeenth century, but the frigate-type ships which took their place as Indiamen were by no means uniform. A viceroy who made the voyage to Goa in the great *São Pedro Gonçalves* in 1702, reported that smaller frigates of from 30 to 40 guns would be better and cheaper for use in the *carreira*, but his advice does not seem to have been taken.²

The old argument as to whether it was better to build Indiamen in Portugal or in India still continued during the period under review; but it was given a new twist in the first half of the eighteenth century by the advocates of Brazilian-built ships. The viceroy Vasco Fernandes Cesar de Menezes wrote to the Crown in January 1713: 'The ships which last longest in India are those which are built in Brazil, for the white-ant does not damage them, as can be seen by the example of the frigate *Nossa Senhora da Estrella*, and by the other one which is now leaving for Portugal, since they have been in India for fifteen years, and could serve for another fifteen. It does not seem to me that there would be any difficulty in choosing from among the ships of Oporto those which are to be used as Indiamen, since the majority of them are built in Brazil.' Two of his successors likewise recorded this preference for the use of Brazil-built ships as Indiamen, in 1719 and 1721 respectively.³ The 66-gun *Nossa Senhora do Livramento*, which made at least five round voyages to India between 1725 and 1740, was built at Bahia.

1 Viceroy to Secretary of State, 3 February 1745, in *Arquivo das Colonias*, Vol. iv, pp. 267-71; António de Brito Freyre, 'Assentos de todas as Viagens' (BN Lisboa, Cod. F.G. 435).

2 Viceroy to Crown, 16 January 1703 (AHU Lisboa. Documentos da India, Caixa 38).

3 Vice-regal despatches of 1713-21 in *Arquivo Portugues Oriental. Nova Edição* (11 vols. Goa-Bastorá, 1936-40), Vol. iii, Pt. II, pp. 78-9, 374, and Vol. iii, Pt. III, pp. 46-7. The unnamed Brazilian frigate indicated in the vice-regal despatch of January 1713 was evidently the *Nossa Senhora da Piedade das Chagas*, which made her first India voyage in 1701 and her last in 1724, so the viceroy's chronology was not quite accurate.

There seems to have been fairly general agreement among the experts that Indian teak and Brazilian hardwoods were superior to European oak and pine as shipbuilding timber; but there were sharp differences of opinion about the relative costs and qualities of the different kinds of cordage and naval stores which were also needed. It was authoritatively stated by a Jesuit writing at Bahia in 1618, that it would be far cheaper to build galleons 'either in Oporto, or in Biscay, or in Germany. A galleon which would there cost say 20,000 *cruzados*, would cost well over 40,000 here' in Brazil.¹ Moreover, there was no vast reserve of cheap and skilled labour in Brazil, such as India, China, and (to some extent) the Philippines provided. With the increasing development of Brazil in the second half of the seventeenth century, these arguments lost something of their force, though the Brazilian labour supply was always less adequate than that in India and Europe. But shipbuilding-yards were successively established at Bahia, Rio de Janeiro, and the Ilha Grande, which turned out some excellent ships from time to time, besides some others whose faulty proportions were severely criticized.²

The Indo-Portuguese yards also built some admirable ships, including the 50-gun frigate *Santo António de Tana*, built at Tanah near Bassein in 1681. She only made one round voyage in the *carreira*, but saw a good deal of service in the Indian Ocean before she was lost in the defence of Mombasa (October, 1697). The capture of Bassein and the 'Province of the North' by the Marathas in 1738/39 was a severe blow to this industry, which was likewise adversely affected by the economic decline of Goa. But smaller vessels of excellent quality were occasionally built at Damão, some of them for the English 'country-trade', until into the nineteenth century. Portuguese, Brazilian, and Indian-built shipping were all, therefore, represented in the *carreira*; but I have the impression that on the whole Lisbon-built ships predominated.

One criticism of Portuguese Indiamen which was no longer repeated after about 1650, was that their armament was insufficient for ships of their size. The *regimento* promulgated in 1604 envisaged that each carrack in the *carreira* should mount at least 28 guns, of which 20 were described as *peças grossas* or 'great guns'. In practice, even the largest four-decked carracks seldom mounted more than 22 or 23 guns, and too high a proportion of these were only eight-pounders. Although this regulation of 1604 was still nominally in force over a century and a half later, it had long

¹ Letter of Fernão Cardim S.J., d. Bahia, 1 October 1618, in S. Leite S.J., *História da Companhia de Jesus no Brasil* (10 vols., Rio de Janeiro (1938-50), Vol. 1, p. 163).

² V. Rau, *Os manuscritos da Casa Cadaval respeitantes ao Brasil*, Vol. 1, pp. 424-29, and Vol. II, pp. 116, 120-1.

since ceased to have any relevance.¹ Portuguese Indiamen of the first half of the eighteenth century usually mounted between 40 and 70 excellent bronze cannon of adequate calibres. In fact, it may be said that by contrast with the poorly gunned carracks of the late sixteenth century, the frigate-type Portuguese Indiamen of over a 100 years later had more than sufficient weight of metal in their broadside, as the viceroy pointed out in his despatch of 16 January 1703.

I have not the space to analyse the eighteenth-century vicissitudes of the *carreira da India* in any detail. Suffice it to say that although the voyage was always more or less a hazardous one before the problem of longitude was solved (1765–75), conditions gradually improved. There were still numerous deaths among the convicts embarked as soldiers for as long as this system continued, but the shipwreck-rate showed a marked decline. The *carreira* had staged a definite if rather erratic recovery from the parlous plight it had reached when Richard Flecknoe penned his indictment in 1650.

¹ *Regimento dos Escrivaens das Naos da Carreira da India*, printed respectively in 1611, 1640 and 1756, are identical in this as in most other respects—an interesting example of Portuguese conservatism in maritime matters.

RECORDS

THE PLYMOUTH PORT ORDERS OF 1858

Captain T. P. Gillespie, M.B.E., R.N.

The Plymouth Port Orders of 1858 are contained in a printed bound volume of 177 pages and were issued from the *Impregnable*¹ on 1 May 1858, under the authority of 'Sir Barrington Reynolds, K.C.B., Vice Admiral of the Red and Commander-in-Chief of Her Majesty's Ships, Vessels, employed and to be employed on the Plymouth Station'. Sir Barrington Reynolds was Commander-in-Chief from 1857 to 1860 when he was relieved by Admiral Sir Arthur Fanshaw, K.C.B. They were addressed to 'The respective Captains, Commanders and Commanding Officers of Her Majesty's Ships, and Vessels, in Plymouth Sound, Barnpool and in Hamoaze' and were countersigned by the Secretary to the Commander-in-Chief—Charles Richards.

The first order is a General Memorandum on the subject of carriage of treasure which in those years was a source of considerable income to commanders-in-chief and captains of ships. The Memorandum is in the following terms:

'I, Barrington Reynolds, Vice Admiral of the Red, and Commander-in-Chief of Her Majesty's Ships and Vessels on the Plymouth Station, am desirous of partaking in the advantages, with the risks attendant thereon, arising out of the conveyance of Freight of Treasure, in any of the ships, or vessels, under my Command; and I hereby engage to make good to the Captain, or Captains, Officer, or Officers, commanding such ships, or vessels, respectively, such part of any loss, or

¹ Second rate of 1810—renamed *Kent* in 1889, renamed *Caledonia* in 1891. Sold in 1906.

damage, for which he, or they, may be liable, in respect to the Gold, Silver, Treasure, or other articles so carried on freight, and which he, or they, respectively, shall have actually paid, and satisfied, as shall be in proportion to the Share or Interest, in the said Freight Money to which I may be entitled.'

This is followed by 23 sections and an appendix, details of which are as follows.

General Orders

There are fifty-eight General Orders, the first of which perhaps shows the tempo of life at the time:

'The Commander-in-Chief is accessible at all hours to officers coming to him upon the Public Service; but it will be more convenient to receive them between 10 a.m. and 1 p.m. and not later, except in cases of emergency.'

The orders which follow deal with the conduct of correspondence—all letters were to be delivered by 9 a.m. 'but no letter will be received after noon unless marked IMMEDIATE, which will imply that it is of importance, or that it is a reply ordered to be sent in immediately': the entry of officers, who were required to produce their commission or warrant before being entered on the ship's books; uniform to be worn; marks of respect—'The Commander-in-Chief desires that the crews of H.M. Ships be directed to pay the same marks of respect to officers of the Army as to the Officers of their own Service'; smoking—which was forbidden for officers in the public streets: and the routines to be worked.

This section also includes orders for the collection of sillage, mustering of crews, deaths, writs, coroners' inquests, the landing of tobacco—'Men who take up tobacco are to be informed that the Admiralty will not interfere to prevent the utmost penalty being inflicted in any case where the Regulations of the Customs, prohibiting the landing of tobacco, may be infringed', and an order directing that officers were to join any ship to which they might be appointed, which is well worth reproducing in full:

'Frequent remonstrances having been addressed to the Admiralty by Officers appointed to Her Majesty's Ships, and constant solicitations on their behalf, both public and private, having been made to change them from one ship to another; Officers generally are reminded that it is indispensable for the Public Service, that every Ship in the Navy should be adequately officered and manned, and that it is their duty carefully to obey Their Lordships' commands, and to join any Ships, or to proceed on any Service, to which they may be appointed; and Their Lordships cannot consider an Officer as properly discharging his duty to the Service, who, without good cause, has resource to such remonstrances or solicitations.'

Pilotage

This section consists of nine articles and deals with pilotage for the port of Plymouth as well as general instructions for pilots when embarked. It is pointed out that: 'it is the duty of the Masters of H.M. Ships to pilot them into, and out of Plymouth Sound'. Pilots were not to be employed on this duty 'except in the case of a Master of a Ship declaring himself incompetent to perform the duty, when in the absence of the Queen's Harbour Master a Pilot may be engaged: but every such case is to be reported to Their Lordships, who will consider the propriety of charging the expense of such pilotage against the pay of the Master'.

Trinity House pilots were to be messed in the wardroom, but in the case of other pilots the commanding officer was 'to exercise his discretion as to the Table at which the Pilot should take his seat'.

Finally, the Commander-in-Chief drew attention to the fact that the Elder Brethren of Trinity House had called attention to the want of practical knowledge of the navigation of the English Channel which had been shown by officers presenting themselves for examination for master, and he instructed commanding officers to inform officers that they must give more attention to 'this necessary part of their duty'.

Salutes

The third section entitled 'Salutes' is a very short one and consists of four orders. These deal with salutes to the Royal Standard; the position where salutes were to be fired when leaving Plymouth (outside Devil's Point) and an instruction that wads were not to be used when firing salutes. The last order points out that at Brest salutes were not fired before six o'clock in the morning 'and they are seldom made before eight o'clock'. H.M. ships were instructed to comply.

Courts-martial

The orders about courts-martial—eleven in number—consist for the most part of reprints of Admiralty circulars on the subject. Order no. 7 in this section is unusual and reads as follows:

'An instance having occurred of an Officer who had been tried by Court-Martial being, on his return to his ship, received by the Ship's Company with public cheers, all such demonstrations of approval or disapproval by Ships' Crews relative to their officers, or to sentences of Courts-Martial, or on other occurrences, are most strictly forbidden.'

It would be most interesting to know the details of the case which led to the issue of this order.

Order no. 10 stated that 'the Admiralty have directed that Officers holding the Rank of Field Officers shall be received with the usual guard at Courts-Martial, and on all other occasions requiring Full Dress when the Service will admit thereof, but on other occasions the Commanding Officer may order the guard, or otherwise, as he may deem fit'.

Punishments

This section covered the instructions for keeping the Defaulters' Book, which was to contain a record of the offence and punishment awarded 'to every person on board under the rank of a Quarter Deck Officer' and was to be produced at inspections or when required by a superior officer.

Corporal punishment, without the written approval of the Admiral in command or Senior Officer for the time being, was forbidden in the Hamoaze and in the Sound and punishment by confinement in coal bunkers was strictly prohibited.

Summary imprisonment and desertion

The first of these two sections deals with the detailed orders for sentencing a man to imprisonment and allows for men sentenced summarily to be released before the expiry of their sentence if the ship to which they belong is proceeding to sea. The second section starts off with:

'The Lords Commissioners of the Admiralty have called attention to the system, too often pursued, of not endeavouring to detect and bring back Deserters, on account of their being troublesome characters, of which practice Their Lordships highly disapprove, desertion being an offence of the greatest magnitude, and one that should be checked by every possible means', and then goes on to list the action that should be taken on a man deserting and the rewards payable for his apprehension.

Marines who gave themselves up as deserters from the Army, were not to be discharged until the Admiralty had communicated with the Horse Guards and the case had been fully investigated—deserters from the Militia, on the other hand, were to be retained and 'have a charge of one penny a day against their pay for 18 months or to be imprisoned agreeably to the Act of Parliament' the man's commanding officer being informed of the action taken.

Leave of absence

Fourteen orders were included in this section. They include instructions for leaving addresses on board when proceeding on leave and the somewhat strange order to modern eyes that 'The Lords Commissioners of the Admiralty have intimated that no officer on full pay can be granted 42 days leave of absence.'

The issue of liberty tickets and the dress of ratings and marines on leave are also included.

Pay

The section covering pay contains nine orders the first of which is to the effect that when ships, not under orders to be paid off, arrive in port, having more than six months' pay due, the pay books were to be sent into office so that the crews might be paid. Regulations covering the payment for tuition of 'Young Gentlemen', extra pay for heavy work, the pay of men in Crown debt, and the payment of allotments, are also included.

Hospital

Eleven orders about the discharge to and from the Royal Naval Hospital are included. Patients were to be sent by boat as soon after breakfast or dinner as possible and due attention was to be paid to the times of low water as 'a cutter can not land at the wharf between two and a half hours before, and two hours after low water'. Patients were only to be sent through the town on very urgent grounds and were not normally to be sent to hospital on Sundays.

Details of medical surveys were also given as well as orders for dealing with men belonging to the coast-guard, newly raised men subsequently found to be unfit, who were to 'be surveyed at the Hospital by three Captains, assisted by their respective Surgeons and the Medical Officers of the Hospital'; and distressed British subjects received from abroad and requiring medical treatment who were to be admitted to the hospital and subsequently discharged 'to the Parish'.

Entry and raising of men

This section consisted of eighteen orders. Volunteers were to be entered without regard to 'any difference of religious creed' but none over the age of 50 were to be received without express authority from the Admiralty. No foreigner was to be entered and the entry of messmen was also forbidden.

Men offering themselves for the rating of master-at-arms, sailmaker, ropemaker, caulker, blacksmith, cooper, shipwright or armourer were to be entered as such provided they had previously served in that rating in one of H.M. ships or could produce satisfactory proof of their qualifications. In the absence of such proof artificers were to be sent to the dockyard, ordnance department or victualling yard for the necessary examination and if found qualified the certificates issued were to be taken as sufficient authority for the captain to enter them.

No apprentice was to be entered and 'each young man, before being accepted, is to be questioned by the Volunteering Officer in order that this fact may be ascertained'. He was also to be questioned as to whether he belonged to the Militia or Royal Naval Coast Volunteers.

Militiamen could be entered under certain conditions and in this case the ten shillings bounty money was to be repaid to the Militia regiment and charged against the man's pay account. Deserters from the Militia were to be dealt with as mentioned in the section 'Summary Punishment and Desertion'.

Other orders dealt with 'volunteers from the Coast Volunteers from ships in ordinary', and the entry of bandsmen who were allowed to be entered in lieu of able seamen in the following proportion:

First and second rates—eighteen,
Third and fourth rates—fifteen.

Finally, great care was to be taken that all men entered with the rating of stoker had actually performed that duty, and not only that of fireman or coal trimmer.

Entry and training of boys

Boys were not permitted to be entered from shore without the express permission of the Admiralty or Commander-in-Chief; in addition boys were not to be entered from Union Poor Houses without similar authority. Boys from Greenwich School were to sign a Continuous Service Form of Engagement and the words 'Greenwich Apprentice' were to be shown against

their names on the ship's books. For all boys entered under the age of 18 the written consent of their parents was to be obtained if practicable, though they could be entered without such permission if necessary.

Boys were to be trained 'to the guns and Small Arms, as well as the Cutlass Exercise' and were daily to be exercised aloft in 'furling and reefing the mizzen top sail, shifting the Sail and Yard, etc.', with the proviso that 'Boys are not to be overworked aloft when young'.

Religion was not forgotten and it was enjoined that 'the teaching of the Church of England Catechism is not to be enforced on Boys, who being of a different religious persuasion, might conscientiously object to receive Religious Instruction in a Creed at variance with their own, but Commanding Officers are at all times to satisfy themselves of the validity of such objections'.

In all there were eight orders dealing with the entry and training of boys.

Royal Marines

There were eleven orders dealing exclusively with the Royal Marines and they covered such subjects as the provision of bedding, arms and accoutrements, uniform—'Marines are on no account to be permitted to land except in their proper dress'—special allowances and their disposal on a ship being paid off.

Establishment of engineers and stokers

The twenty-three orders in this section covered schemes of complement of officers, leading stokers and stokers, based on the horse-power of the vessel and whether she was a screw ship or was fitted with paddle wheels. All steam vessels with a complement of over 100 were to bear in lieu of an able seaman 'a person who is to be rated 'Engineer's Servant' and is to be paid as a non-continuous able Seaman'.

Economy in the use of fuel, the drawing of fires and the best methods of getting up steam were touched upon—'To prevent mischief to the Boilers of Steam vessels by getting up steam as quickly as possible, the fires except in cases of extreme urgency, are to be lighted sufficiently early to allow of the tubes being gradually heated. It is deemed that a third more time will prevent the evil results above alluded to.'

Steam vessels were not to put into any port on account of defective machinery 'without the Senior Engineer on board gives a written opinion that such a step is necessary', and this written opinion was to be affixed to the list of defects.

Fitting and refitting

The thirty-six orders in this section covered a variety of subjects from the number of mates, midshipmen and naval cadets allowed to the various classes of ships, the supply of charts—'all officers supplied with North Sea Charts are cautioned to be careful to navigate by the Chart of 1853, and not by that of 1812, when in the vicinity of shoals'—to the supply of communion plate in the case of ships carrying chaplains.

Five months provisions 'of every species except Bread' were to be embarked by ships fitting for foreign service: ships destined for Home or Channel service were however to embark three months' provisions.

This section also gave details of the inspections to be carried out on completion of time in dockyard hands—an inspection which is still authorized by Article 2936 of the Queen's Regulations and Admiralty Instructions: swinging for compasses and advances of pay before sailing.

War department—powder and shells

This section dealt with the embarkation and allowances of powder and shells for H.M. ships as well as general instructions covering what is now known as the 'Gunnery Department'.

The polishing of the metal covers for hammers and sights of the guns was forbidden and 'officers will be charged with new covers whenever those issued may have been polished'. The practice of blacking certain leather articles, e.g. cartouche-boxes, magazines for cartridges, etc., which were supplied in a brown condition, was strictly forbidden.

The solid shot for 68-pounder guns of 90 and 95 cwt. were to be painted red to distinguish them from hollow shot.

Ships sailing for Rio de Janeiro were to load fifty cases of powder and a proportionate quantity of 32-pounder shot for the use of ships on that station.

There were also detailed instructions for the stowage of 'Moorsom's Shells', 'Dell's Metallic Powder' and 'Metal-lined cases'.

Finally, officers were strictly enjoined to pay particular attention that ordnance stores were returned in their proper cases or barrels and 'that none of the articles are incautiously mingled together: and the Admiralty have notified that in the event of any inattention in this respect, they will assuredly mark their disapprobation in the severest manner, of any officer offending against the said Instruction'.

Gunnery

Eleven orders were included under this heading and covered such things as the allowed complements of seaman gunners, which varied from twenty-five in a first rate to two in gun brigs, schooners and cutters: the examination of midshipmen: exercises with double-shot, grape and cannister shot: and various miscellaneous orders for magazines, handling of powder, etc. Order no. 6 of this section is of particular interest and reads as follows:

'The War Department having reported that many of Her Majesty's Ships return their Short Practice Ammunition untouched, showing that this important exercise is frequently omitted, the several Captains are hereby ordered strictly to attend to the Regulations for exercising their crews at short Practice.'

Rumour has it that this practice was not uncommon in far more recent years!

Guard

A guard was to be rowed in the Sound and the Hamoaze: the seventeen orders in this section gave detailed orders for the rowing of the guard, the boarding of ships—'particular care is to be taken not to board any ship of war or Merchant Vessel, without first ascertaining that she is not liable to Quarantine'—the reports to be made, etc.

Plymouth Sound

This section, which consisted of thirteen orders, contained instructions on the precautions to be taken by ships and boats in bad weather, or when unable to return to their proper ship; the dumping of rubbish; orders for the striking of masts and yards in bad weather which was normally the responsibility of the Senior Officer afloat, 'but if the Harbour Master, from his great local knowledge, and experience, should deem it necessary for the safety of the ships, that the Yards and Topmasts should be struck, before the Senior Officer may have ordered this to be done, and should make the signal for this purpose... it is to be promptly executed by all Her Majesty's Ships in the Sound'.

Paying off

The thirty-one orders in this section gave detailed instructions for the action to be taken when a ship was ordered to be paid off, together with the returns to be made, instructions for the survey of stores, masts and rigging, leave to be granted—'Leave of absence is not to be granted to any officer, Seaman, Marine or Boy, without the express permission of the Commander-in-Chief, during the time a ship is under orders for Paying Off'—disposal of the ship's company, etc.

The final order—no. 31—is worth reprinting:

'As much dirt is created by Strangers from the Shore coming onboard when paying off, Sentinels should be planted in different parts to prevent such persons being indiscriminately admitted, or permitted to go below the Lower Deck in Ships of the Line, or the Main Deck in Frigates, or in any part not sanctioned by the Captain; and a Guard of Marines will be sent from the Ordinary Guard Ship, to maintain proper order and regularity, before the Party belonging to the ship is disembarked.'

Reports and returns required from Her Majesty's ships

Returns to be rendered were as follows:

Daily returns	Two
Weekly returns	Three
Monthly returns	Six
Quarterly returns	Ten
Half-yearly returns	Eight
Annual	Five
Before sailing	Fourteen
On arrival	Seven
On paying off	Seventeen

It is interesting to note that some of these returns are still required under current regulations

Signals

This section gave details of all local signals in force.

Examinations

The eight orders in this section gave details of the dates on which examinations for lieutenants masters, paymasters, second masters, clerks, gunners, boatswains, carpenters and ships' stewards were held, and reprinted a number of Admiralty circulars governing such examinations.

The Appendix

The twelve Appendices consisted of reprints of certain Admiralty directives, and others issued by Admiralty departments. They covered such subjects as divine worship on Sundays for Roman Catholics—'The Lords Commissioners of the Admiralty being desirous of providing the means of attending Divine Worship on Sundays, according to the forms of their Religion, for such officers, seamen and Marines of H.M. Ships at this port as profess the Roman Catholic Religion, and are anxious to attend such Service, have been pleased to direct the *Hotspur*¹ Frigate, now in Ordinary, to be provided with fittings for the temporary Chapel. . .'; the stowage of powder in Dell's cases: the form to be used for guard reports: the entry of seamen riggers into the dockyard: the entry of seamen into the coast-guard: regulations for the stowage of hammocks, kit bags, etc., by men belonging to ships paid off 'during their temporary stay on shore' the rules governing the award of pensions: rules for the guidance of medical officers on the examination of volunteers for the Navy and instructions to paymasters on the payment of crews on pay books prepared at the Admiralty.

Conclusion

New printed editions of the Port Orders were issued in 1862 by Vice-Admiral Sir Houston Stewart and in 1871 by Admiral Sir Henry Codrington. They contain a number of changes from those issued in 1858, of which, perhaps, the most interesting to the writer, who has worked for many years in various Admirals' offices, is the one in the Order Book for 1871, which reduces still further the normal 'office hours' of the Commander-in-Chief to 'the hours between 11 a.m. and 1 p.m.'

1 Fifth rate of 1828, renamed *Monmouth* in 1868. Sold in 1902.

JAMES BURNEY'S OPINIONS ON THE NAVAL MUTINIES OF 1797

Contributed by H. D. Sproule, M.A.

Last summer, while engaged on research in the Pierpont Morgan Library in New York, in connexion with the Burney family, I had occasion to study a letter dated 15 June 1797, from James Burney (then a post captain on the retired list) to Lord Spencer, First Lord of the Admiralty. Written when the public furore of the naval mutiny was at its height, the letter expresses the writer's opinion that the mutiny was caused by the severity of naval regulations, the harsh and often capricious punishments, the absence of leave, and the inequity of the distribution of prize money. It makes a number of suggestions as to how these grievances might be redressed, and recommends lenity toward the mutineers. Since neither Manwaring and Dobree in *The Floating Republic*, nor Manwaring in *My Friend the Admiral* make any mention of it, although both books give ample evidence of enterprising and exhaustive research amongst Admiralty records, it would appear that such a letter had either been lost or intentionally removed from the collection.

The thought occurred to me that *The Mariner's Mirror* might be interested in looking at a transcript of this letter, since the latter deals with such an interesting period of naval history, and also because it concerns James Burney (a figure of considerable importance in nautical research by virtue of his association with the Cook voyages) during a phase of his life when his biographer seems to have discovered material of only the scantiest kind. As Manwaring notes (*My Friend*, etc., p. 206), 'the attitude of the Admiralty from now onwards is one of the mysteries of naval history. A search through the Admiralty records has not provided a solution...'. We have Burney's pamphlets on plans against invasion in 1797 and on remedies for the financial crisis of that year; there are also occasional references to him amongst family letters of the time; but beyond this, there seems to be very little known of him during the last decade of the century.

My Lord

Copy of a Letter to the R. Hon^{ble} Earl Spencer.

June 15th, 1797

It is with considerable embarrassment that I venture on this address; but trusting that no other motive will be imputed to me than regard for the interests of the Navy, I am encouraged to hope your Lordship will excuse the liberty I take in thus offering my sentiments.

I believe the great defects in the Naval Laws and Regulations to have been the principal, if not the sole, cause of the late mutiny. Certain it is, they have caused a disinclination in the best seamen to their being employed in His Majesty's Naval Service. As the declaring my opinion freely and without disguise to your Lordship can occasion no injury to the service, I am not apprehensive of suffering in your Lordship's opinion in professing my belief that the Articles of War as at present existing, and as I have seen innumerable instances of their being acted upon, are by much too severe and oppressive; and that they certainly do produce the effect of deterring good men from entering into the service of the Navy.

The best discipline consists in regularity and method. When such is the practice, and where men believe their officers bear them good will, severity of punishment is not necessary. To the superiority of our commerce and not to the severity of discipline, is to be attributed the superiority of British Seamen, of which many striking instances occur in our privateers and merchant vessels. If a few of the regulations which bear the most hard on seamen were amended, it is probable that mutiny would become discreditable among the seamen themselves, which would be the best security against any repetition of what has happened, as then no combination could be carried to [MS.2] any extent. Whatever is done would be best done whilst the war yet continues, that when Peace arrives and the seamen are discharged, they might carry with them favourable impressions of His Majesty's Naval Service.

The points which principally call for redress are 1st, the distribution of prize money; 2d, the Articles of War and modes of punishment; and 3d, the want of some regulation respecting leave.

35 On the 1st, the justice of their claim is manifest, seeing that under the present regulations it may happen, what when a Captain receives £1000, the share of a Seaman might not amount to a guinea.

Respecting the Articles of War, the hardship which most immediately occurs, and which occasions to seamen the greatest repugnance, is, the being liable to corporal punishment for
40 small offences. This, no doubt, will be thought necessary; but that men should be liable to such punishment at the arbitrary will of any person and without trial, might without difficulty, and I hope your Lordship will think, ought to be avoided. Trials might be instituted in single ships for small crimes, by the Captain or commanding officer being empowered to order such persons
45 as the Admiralty or the Legislature should think proper to declare qualified, to constitute a Court. Such trials take place in regiments, and something of the same kind is practised in the Ships of the East India Company. The misapplication of the Articles of War and of the power of punishment vested in individual hands, is too well known to require proof. I served in a Ship where every
50 one of the maintopmen were stripped and flogged at the gangway for no other cause than that another ship in company got her topgallant yards up first, and not from any wilful negligence on the part of our men. Had we been the first, possibly the topmen of the other ship might have been sufferers. The custom with many officers has been, if any two men are found fighting, to
55 tye both up, and without the smallest enquiry, to punish both. Yet I believe every man will acknowledge that in many cases the receiving the first blow is an irresistible provocation.

The punishment of flogging from ship to ship likewise demands consideration, and perhaps limitation. A criminal is sentenced to receive 500 lashes (a punishment more severe than 1000
60 lashes as inflicted in the army). He receives 250 lashes at one time; not more lest his life should be endangered; and is sent to an Hospital to be cured, after which he is to suffer the remaining part of his sentence.

The remaining article respecting liberty: though leave of absence to visit friends would be
65 attended with too much danger of losing men by desertions, yet reasonable liberty whilst in port and not under sailing orders, to a moderate number at a time, might be allowed; and an article to that effect might be inserted in the Captain's instructions, stating likewise, that those who when on leave misbehaved, or did not punctually return to their time, should forfeit their future claim to
70 liberty. If further punishment for outstaying the time of leave were never inflicted, it would have this good effect, that men would not be tempted to desert from the fear of corporal punishment, provided that their return to the Ship was of their own accord; for if, after expiration of their leave they were discovered and brought on board, they would then become placed in the situation
75 of deserters. Such amendments in the condition of the seamen would be the means of rendering the service so popular as in a great measure, if not wholly, in future to remove the necessity of pressing.

For that which I am going to add, I am anxious to bespeak your Lordship's particular indulgence,
80 sensible that I am taking a liberty beyond that of stating general ideas on the service. If, in punishing the present mutiny, many examples shall be made, it will throw much discredit upon the general character of the British seamen; whereas, if it shall be judged proper, when the mutineers are wholly in the power of government, to make any amendment in the naval laws in
85 favour of the seamen, then lenity can produce no other effect than that of creating good will and attachment.

One more circumstance which I take the liberty to mention is, that the service on the North
90 Sea station is much more fatiguing, and in winter time particularly is attended with so much more danger and hardship than the service on any other station, that it is not improbable a continuance on that station may have created among the seamen, a degree of impatience which may have had a considerable effect in producing the Mutiny.

I have the honour to remain
with the greatest respect
Your Lordship's most obedient
and humble servant
James Burney

100
105 To the Right Hon^{ble}
Earl Spencer (Copy)

NOTES

NELSON'S LEGHORN FRIEND

French, traditionally the language of diplomacy, is also that of romance, as Nelson seems to have discovered.

On p. 91 of *A Portrait of Lord Nelson* (1958), where I quoted from Chapter 19 of the World Classics edition of the *Wynne Diaries* edited by Anne Fremantle, the edition which first included material from Thomas Fremantle, Nelson's fellow-captain, I showed that Nelson had an extended friendship with a Leghorn lady between 1794 and 1796 and suggested that her name was unlikely to be discovered.

Recently, by the courtesy of Mr Hardin Craig, Junior, a fellow member of our Society, I have received a copy of a letter from Nelson, now in the Huntington Library, perhaps the only one extant in his uncertain French. This runs as follows:

'Ma Chere Adelaide

Je suis partant en cette moment pour la Mere, une Vaisseau Neapolitan partir avec moi pour Livorne, Croire moi toujours

Votre Chere Amie

Horatio Nelson

Avez vous bien successe'

Address: Signora Adelaide Correglia

The letter is undated but is written with the right hand, and, therefore, before 25 July 1797. As it refers to Leghorn, perhaps Adelaide was the lady of whom he grew fond. The text is quoted by permission of the Huntington Library, San Marino, California.

OLIVER WARNER

THE SWEDISH SHIP *WASA* OF 1628

(See *M.M.* Vol. 44, pp. 73-4)

Salvage work on the Swedish ship *Wasa* which sank on her maiden voyage in the harbour of Stockholm has been going on ever since she was found in August 1956. Her early history and the events in connexion with her find was related in a note in *M.M.*, February 1958.

At first her name was spelt in two ways, *Vasa* or *Wasa*, according to each writer's fancy, *Wasa* being old Swedish and *Vasa* modern Swedish. Now, however, it has been decided that the official spelling will be *Wasa* and, probably, this way of spelling will be generally accepted in the end.

The divers of the Royal Swedish Navy have been working at the wreck ever since she was found, winter months excepted, when the harbour of Stockholm is frozen. The work has been delayed not a little by the fact that the wreck was situated right outside the gate of the dry-dock, and every time a ship was to dock in or out all the diving equipment, boats and warps, had to be hauled away. The work has all the time aimed at the raising of the ship, and the divers have dredged tunnels under her. The work has been very difficult and dangerous, the divers have been working in pitch darkness in the narrow tunnels under the bottom of the wreck risking every moment the clay giving away and encasing them.

The dirty sour sewer water of the harbour has been very hard on the iron, and every nail and iron bolt has rusted away. The fastenings of the hull proper, however, are nearly all of tree-nails, which is the reason for her holding together. Yet all the upper works, the head and stern decorations the quarter-galleries, port-lids and such things as had been nailed on have all dropped off the ship and were lying all around the hull like an ant-hill, together with broken timber and debris of all kinds torn down by other ships' anchors. The divers have not been looking for loose finds but have been forced to remove all things blocking the way when they were sinking the shafts

under the ship. Thus more than 700 items have been taken up during the diving operations. Of course, the majority of these finds are broken planks and fragments of timber, but, also, there has been a great number of carvings of all types, beautiful women and noblemen, animals and flowers, allegorical and mythological figures, some of them reproduced in *The Illustrated London News* for 7 March 1959. The most important find of all these is the figurehead, a big lion rampant, 15 ft. long. It must have been placed in an unusual upright standing position for an early seventeenth-century ship. Originally it has been all gilded, several square feet of pure gold was still clinging to its mane when it was brought up.

Other finds of importance are the rudder, 35 ft. long but only 5 ft. wide at the bottom. It was constructed of two pieces only, the main piece being a straight baulk of oak 35 ft. long by 3 ft. wide at the heel. The lower foremast was (is) a grown pine spar, 80 ft. long by $2\frac{1}{2}$ ft. in diameter at the upper deck. The mainmast is a built spar of pine and oak, 100 by 3 ft. at the deck.

Working as best they could the navy divers had dredged three tunnels under the wreck by the end of 1958 and the remaining three during the last summer. By the first week of August everything was ready for the raising, that is, for a trial. Two big lifting pontoons, named *Oden* and *Frigg*, and with a lifting capacity of 1200 tons each, were lent free of charge by the Neptune Salvaging Company of Stockholm and were moored over the *Wasa*. Twelve lifting warps, each 300 ft. long, of 6 in. steel-wire hawser, donated by the Fagersta Factory, were placed under the wreck, two in each tunnel, hove tight and locked over the pontoons. The first attempt at lifting was made 20 August 1959, and a lifting power of 700 tons made the ship let go her three-century-old hold in the clay and come up, and in the evening she was landed 200 ft. to the westward in 6 ft. less water. Since then the raising was carried on with a fresh nip at the warps and a new lift every day, always towing towards more shallow water until the ship again touched the bottom. The progress was very slow. Some days she struck soft clay and sank just as much as the day's lift and thus gained nothing, and again she landed on a rising ground with slippery clay and slid back during the night all she had gone forward during the preceding day. However, after nearly one month she was landed in 55 ft. of water to the eastward of Kastellholm on 16 September.

Thus 27 days of salvaging operations have resulted in a total lift of 53 ft. and 500 yards horizontally, and this after three years of diving and dredging work. And yet everybody concerned is well pleased with the result. The ship is now standing on an even keel, upright, and in soft but rather firm clay. The best thing of all is, that the ship has proved to be unbelievably strong. Before the first lift was attempted nobody really knew if the warps would cut through her old oak like cheese, or if she would fall to pieces under the strain, but she stood the rough handling surprisingly well. The divers report the seams on her stem and along the wales to be all tight, and the pitch has not even cracked, indicating no strain or give at all.

Next work in hand is to clean up her old site south of Beckholmen Island as every loose piece of timber is valuable for her ultimate restoration. The ship is still filled up with strange anchors, broken timber and mud, and her upper deck, 20 ft. below water could be cleared and measured off by divers or frogmen. There is great objection to sending divers down inside the ship, where everything, probably, is totally undisturbed since the time the ship was fitted out more than 300 years ago. She cannot be scientifically examined below decks unless she is brought above water, and she cannot be raised unless some 500 tons of ballast is removed, and again that cannot be done unless divers go down inside her. So then between Scylla and Charybdis nobody knows just now how to manage it all.

At present no official declaration has been made as to how she will be treated, but there is no doubt that she will be taken up out of water and restored as far as possible. No kind of treatment will make her old timbers last for ever if she is left in the open with Stockholm's warm summers and frosty winters, dry and wet, warm and cold weather. Therefore she certainly will be housed in a museum of her own, only as yet nobody knows how and where it will take form. One likely idea is to put her in an old dry-dock, seal up the entrance and build a house over it. Another idea is to build a slipway and pull her up and trail her overland to a site in connexion with the Maritime Museum of Stockholm. This is a more expensive way but is more satisfactory in the end.

Her final raising and restoration, including a building, is roughly calculated at £500,000—but at present nobody can tell where this sum is to be found. However, up till now cost has been surprisingly low. All the diving has been made by the navy in the course of training divers, and the *Wasa* has proved to be a grand training object, conveniently situated in the harbour and giving plenty of real difficult and dangerous work. Salvage equipment was lent by the Neptune Company and stores of all kinds have been donated by different firms. Even then there have necessarily been expenses, which up till now have been covered by donations from different Cultural Foundations.

The *Wasa* is surely the most important ship-find ever made, or ever will be made, and it is difficult fully to realize how valuable she is from a historical point of view. She probably has four decks, viz. upper deck, two gun-decks and an orlop deck. The upper deck is to some great extent stove in, but below the upper gun deck she must be virgin soil, everything being left just as it was when the ship started on her maiden voyage in 1628. She will be a wonderful mine of information for nautical research when she can be fully examined.

SAM SVENSSON

NOTES ON 'MANNING THE ROYAL NAVY'

By way of footnote to R. Taylor's excellent article on 'Manning the Royal Navy' (*M.M.* for November 1958, and February 1959) I should like to call attention to a minority opinion appended to the Report of the Royal Commission of 1858-59 by the well-known merchant shipowner and writer on maritime affairs, William Shaw Lindsay. While concurring with many of the detailed recommendations of his fellow commissioners, Lindsay protested that their underlying principles and assumptions were inadequate and outdated. No real account was taken, he declared, of the coming age of steam, in which engineering and gunnery skills would be of far greater importance than old-fashioned seamanship. To Lindsay's dismay, several of his fellow commissioners (high ranking naval officers) and a number of the witnesses seemed to assume, not only that skill aloft in hoisting and furling sails would continue indefinitely to be the paramount requirement of a naval reserve force, but that such skill was somehow inborn and peculiar to the existing seafaring population and their offspring.

On the contrary, as the surest and most efficient way of securing a capable reserve, Lindsay was for drastically increasing the size of the Royal Marine Corps. He regarded the marines as the cream of England's service men; and he was able to elicit a similar opinion from several important witnesses, including Sir James Graham and Lord Clarence Paget. (Evidently, the Royal Marines of the Victorian era stood as high in public esteem as did the U.S. Marine Corps in the days of Guadalcanal, Okinawa, and Iwo Jima.) Lindsay also maintained that a predominantly maritime country, dependent upon her ships for her first line of defence, should do all in her power to foster a military force which was equally capable afloat and ashore. He would therefore have increased the number of marines from 15,000 to 30,000 (at the expense of the army, if necessary); would have used them in time of peace to garrison the seaports of the United Kingdom, while giving them frequent periods of sea duty by a system of rotation; and would have increased the normal complement of marines aboard a man-of-war, on the grounds that the marines could do everything aboard ship (except go aloft) as well as or better than the sailors. They were particularly noted for the excellence of their gunnery.

In time of national emergency the entire Marine Corps would be immediately available for duty aboard ship; its place in the seaport garrisons would be taken by troops of the line, whose inland garrison posts could then be manned by the militia.

A footnote might also be appended to Mr Taylor's remarks concerning the initial reluctance of merchant seamen to enter the new Royal Naval Reserve. To such reasons as he adduces should be added a vigorously expressed derision of Her Majesty's ships of the line, or such of them as were habitually within the view of the mercantile population. Witnesses before the Royal Commission of 1858-59 reported that most of the guard ships in Britain's commercial ports were so-called 'block ships', that is, old 72's supplied with quite inadequate steam power. Under combined sail and steam these ships attained a maximum speed of about eight knots; and they had great difficulty

in stemming an adverse current, especially if the wind was also against them. Captain Mends of the *Hastings*, based at Liverpool, declared that against a spring ebb in the Mersey River he had often stood still, while the merchant mariners ashore jeered and made improper remarks about the capabilities of Her Majesty's ships! It is not surprising that one of the recommendations of the Royal Commission of 1858-59 was that superior ships of the line should henceforth be employed as guard ships.

WENDELL N. CALKINS

GUN NAMES

During the Revolutionary War and the War of 1812, it was the custom in some ships of the United States Navy, for sailors to give names or nicknames to the guns they served. The name applied to the gun and its opposite which would indicate that the entire battery was named. These names were not cast in the guns but were either engraved on small copper plates or painted over the gun ports. The names were fanciful and indicated to some extent the thoughts of the time. When the U.S.S. *Chesapeake* was captured, her guns bore the following names:

<i>Main deck</i>	<i>Forcastle</i>
Brother Jonathan	United Tars
True Blue	Jumping Billy
Yankee Protection	Rattler
Putnam	
Raging Eagle	<i>Quarterdeck</i>
Liberty Forever	
Dreadnought	Bull Dog
Viper	Spitfire
General Warren	Nancy Dawson
Mad Anthony	Revenge
America	Bunker Hill
Washington	Pocahontas
Defiance	Towser
Liberty or Death	Wilful Murder

While it was a continental custom for armies to give names to their pieces of artillery, I can find no reference of this custom extending to navies. Was it known in the Royal Navy?

EDGAR K. THOMPSON

'GALLANT' GENTLEMEN'

In the galaxy of 'Gallant Gentlemen' some of the readers of *Mariner's Mirror* may well remember Admiral Sir Walter Cowan. Few officers so physically small (he was only 5 ft. 2 in.) could have had so masterful a personality. The boldest mutineer would have hesitated to attempt impertinence to him. 'Do right and fear not', was his motto, and he was as fortunate as valiant. In all the wars in which he was conspicuous he was never once wounded.

Entering the R.N. in 1884—son of Captain W. F. J. Cowan, Royal Welch Fusiliers, and nephew of Sir Charles Lucas—he had cherished from his nursery days strong principles and beliefs as to the honour of the Empire; and in old age he could look back upon a variety of arduous experiences, some of which he communicated to Captain Lionel Dawson, R.N., who embodied them in a volume called *Sound of the Guns*, dedicated in 1945 to Admiral of the Fleet Lord Cunningham of Hyndhope.

In the Benin Expedition of 1897 (in which *inter alia*, human sacrifices were abolished) he served in the Naval Brigade under Rawson and Egerton. His D.S.O. was won in Egypt and the Sudan, after the battle of Omdurman. In South Africa with Lord Kitchener, as naval A.D.C. he had many adventures; and in the Great War of 1914-18 he commanded the battle cruiser *Princess Royal* in the battle of Jutland, and was subsequently C.O. of the First Light Cruiser Squadron of the Grand Fleet.

One of his most remarkable exploits was tactfully omitted from the Obituary notices in 1956, namely, his having defeated the Bolshevik Fleet in the Baltic Sea, and gone to the rescue of Marshal Mannerheim in Finland. Of Mannerheim he used to relate that he was one of the finest soldiers he had ever known, 'and one of the handsomest and best dressed'.

In 1921, Sir Walter, already K.C.B., was made a Baronet. In that he had no son, this form of honour seems not ideal.

His next service was in command on the North American Station; and in 1930 he became Principal Naval A.D.C. to the King. The following year he retired to his native Warwickshire. But when war broke out in 1939, he offered to serve in any capacity not lower than the rank of Commander; and during the ensuing years he obtained a bar to the D.S.O. he had won in his youth. Like the Elizabethans—whom he appreciated with a more than academic sympathy—he could be sailor or soldier as the occasion required; and in the Western Desert he acted as liaison officer with Indian Cavalry, and fought in every engagement of that Cavalry until after a Homeric struggle he was taken prisoner by the Germans in 1942.

That he was Hon. Colonel of King Edward VII's Own Cavalry was for a naval officer unprecedented in our time. His Indian soldiers adored him: and Risaldar Major Azim Khan Bahadur wrote to him: 'It is a matter of great pride to us that our Honorary Colonel is one whose bravery and renown are recognized the world over. . . . When you were captured and taken from us, our sorrow was acute. But now that you are back, our good fortune has returned. Every one of us prays to God for your long life, . . . honour and happiness.'

Even into old age he remained devoted to the memory of his mother. Small and fragile, with a gentle voice and gracious manner, hers was a most uncompromising spirit of pride in the honour of the Service. The chivalry of her son, and his steadfastness, were easily understood by those who had known his mother. His handwriting, large and clear, was as easy to read as print, and he did not grudge the trouble of encouraging and admonishing his friends by letter.

In his estimates of other men of action, past and present, he was generous; jealousy or envy he did not feel and could not understand. Nor was apathy comprehensible to him. 'When I was a youngster', he wrote in 1950 to a friend, 'I would have walked a hundred miles to see a V.C. for 5 minutes. But the young of today seem less interested'.

Up to the last, he faced life with a fiery patience and clear intellect; and when at the age of 84 he died peacefully in his bed at Kineton, we mourned the loss of a Gallant Gentleman, who had been always the same and consistent—accepting joyously the dictum of Sir Humphrey Gilbert (A.D. 1566), '*Give me leave to live and die in this mind: that he is not worthy to live at all who for fear or danger of death shunneth his country's service and his own honour*'.

E. M. TENISON

THE HUGUENOT NAVY, 1568-70

The *Proceedings of the Huguenot Society of London* (Vol. xix, no. vi) carries an article by B. Dietz on a little-known naval campaign—that of the Huguenot and English corsairs during the Third Religious (Civil) War in France, 1568-70. The protestant navy played no inconsiderable part, as befitted the maritime strength and interests of its owners. Its chief function was to attack the Atlantic commerce of the catholics, making thereby an appreciable contribution to the Huguenots' sinews of war, while correspondingly weakening their enemies. But, also, the navy was vital to the defence of the sea-girt Guienne coast, and to keep open their lines of supply and communication with their most important ally, England.

The fleet was quite formidable, consisting (like almost all contemporary navies, Spanish and English included) of wholtime ships owned and maintained by the state—the 'Cause' as its adherents called it—and a larger, but not necessarily stronger, group of privateers. Some of these were Huguenot-owned, but many were English. Condé, the protestant leader, would have liked a more formal and less part-time fleet, and, early in the war (1568) asked Queen Elizabeth to lend him part of her 'royal' navy. This she refused, being not yet committed to hostilities with Spain or catholic Europe—not yet, even, excommunicated (1570). But her policy and sympathies alike induced her to help 'the Cause', and she readily (if clandestinely) authorized English

privateers based on England to fit out their own ships, at their own expense, and serve the Huguenots. So Condé was able to expand both his naval power and his revenues without further cost to himself, his 'private' English allies sailing under Huguenot Letters of Marque.

There were no set battles, but this mixed navy proved its value on many occasions. It also introduced on to the stage of history that great champion of Protestantism Henry of Navarre, then a very young man acting as Admiral of Guienne. Interesting English names appear too, not as commanders but as owners of English ships. Sir Arthur Champernowne, Vice-Admiral of Devon, was one, while John and William Hawkins, then flourishing merchants of Plymouth, were others who invested their capital in this characteristic form of Elizabethan 'trade'. Such activities led, as usual, to trouble in high places, culminating in the occasion when a Huguenot squadron forced a Spanish fleet carrying bullion to the Low Countries into Plymouth. Thereupon Elizabeth intervened, and confiscated the treasure—'to protect it from the corsairs', she said. This led to the arrest of English ships in both French and Spanish ports and, for a time, to a complete embargo on both sides. The cracks were papered over in the end, Elizabeth being forced to close—or pretend to close—her ports to the corsairs. But the whole episode was, as it were, a rehearsal of what was to happen on a larger scale, and much more often, in the 1570's and 1580's.

That this waging of war by profit-making privateers had its weaknesses is very apparent. The method was fairly successful this time, but much less so a decade later when used by Don Antonio, anti-Spanish claimant to the throne of Portugal. He too relied upon corsairs, Huguenot and English: who, however, let him down badly at the battle of St Michaels in 1583, where their conduct (and defeat) lost him the Azores and his best chance of ultimate success.

It is a pity that we are not given more details about the 'private' ships themselves. They were mostly small, and their guns, though they carried many, were mostly small too. Yet the story of the campaigns is interesting if only as throwing light on the backgrounds of those many Englishmen, officers and crews alike, who seem, when we come to Armada days, to be acting 'as to the manner born'. Of course they were! Most of them were not 'out' for the first time in 1588. Far from it: they were old hands at the sea-fighting game.

M. LEWIS

AMERICAN PRISONERS OF WAR IN GREAT BRITAIN

With reference to E. H. Turner's article in the *Mariner's Mirror* (Vol. xlv, no. 3) on 'American Prisoners of War in Great Britain 1777-1783' based on two Admiralty Letterbooks in the National Maritime Museum, it is perhaps worth observing that very large numbers of departmental records exist at the Public Record Office in the light of which these letters can be fully and accurately interpreted (for example, to mention some of the most important, Ad. 97/123-4, 127, Ad. 98/11-15, Ad. 99/49-50). To take one example, the fact that Americans who escaped left behind money in the hands of prison agents arose simply from the rule that all money belonging to prisoners was to be given into the custody of the Agents and paid out in reasonable instalments as required, each agent keeping a 'Money Book' for the purpose of recording these transactions (see, e.g. Ad. 99/49, Minute of Board of Sick and Hurt Commissioners of 3 January 1778). It proves nothing as to the relationship between agents and prisoners as suggested by E. H. Turner, Vol. xlv, p. 203.

OLIVER ANDERSON

NAVAL PUNISHMENTS, 1838

One of the greatest shipboard problems of old-time naval officers was drunkenness among the crew. When flogging was abolished in the United States Navy, captains exercised ingenuity in devising forms of punishment for drunkenness and other offences committed aboard ship. Some of these punishments were illegal and even sadistic but they achieved the desired effect.

When Commander Uriah P. Levy U.S.N. took over command of U.S.S. *Vandalia* in 1838, he instituted the following punishments in lieu of flogging:

Drunkenness. The offender was placed in his hammock and lashed securely and remained in this mummy-like position until the following day.

Habitual drunkenness. A wooden bottle painted black with the inscription 'Punishment for Drunkenness' was secured round the sailor's neck and he wore this day and night.

Petty offences. The delinquent's whiskey ration was watered in the proportion of 1 pint of water to a gill of whiskey.

Petty theft. A wooden collar was fastened round the neck with a badge hung on the back specifying the crime. The offender messed in the manger and was forbidden to speak to anyone.

Fighting. The offender was made to drink a tin pot full of sea water.

Strange to relate, Commander Levy, who was best known in the U.S. Navy for his efforts to abolish flogging, was court-martialed in 1842 for illegal punishment when in command of U.S.S. *Vandalia*. He was sentenced to be dismissed from the service but President Tyler remitted the sentence of the court.

EDGAR K. THOMPSON

THE COG

The cog is first known by name a little before 1200, and though she continued in England as a ship-type for the next two centuries, not much has been recovered as to her special features. It seems therefore advisable here to summarize what can be stated definitely.

She originated in northern Europe, perhaps in Norway, perhaps in the Low Countries, as a humble type of carrier, serving at first as a coaster and as a tender to bigger ships. She was short, broad and strongly built, and as such was adopted in England as a modification of a pre-existing type. Then, as voyages grew longer in the thirteenth century, across the North Sea and the Bay of Biscay, she increased in size to meet the demand, but probably not to above 200 tons, and of these but few, for as long as the oared galley continued to be the 'capital ship'. Edward I's short war with France saw the sailing ship well on its way to becoming the capital ship and with the exception of a very few for particular purposes no more galleys were built in England for naval war after this reign. Cogs, being the strongest type of sailing ship then in use, took their place and rapidly increased in size. Thus the English capital ship of the fourteenth century was the cog and the great sea battles of the early part of the Hundred Years War were won by the cogs of England. The size of these ships is not on record, but from what we know of their complements and gear it is inferred that a few of the largest may have measured about 400 or even 500 tons.

A feature which distinguished the cog from any other English or French ship contemporary with her was that she was exceptionally high-sided and thus had in her time that superior command for her missile weapons which was sought a century or so later by raising much increased 'castles' at the ends of the normal ship to compensate for the lower freeboard of her side. This therefore was the type suited for the advantageous use of the long-bow, then a new-comer in England and destined to be as successful at sea as on land. She seems, from the few and inadequate representations which we have of her, to have had no more superstructure than a short poop, so low as hardly to break her sheer, with a forecastle so small as probably to be called a top. There was therefore no considerable surface available for ornamentation, nor, considering the origin of the cog and its utilitarian development, can there have been any tradition of it. The most to be expected would be that, the cog having developed into the capital ship, more attention would be paid to her appearance, especially when, at first by purchase and a little later by prize, the King had come to own more and greater cogs than he had ever owned sailing ships before.

One of the early ships bought by the King and probably one of the greatest of them was the cog *All Hallows* which he repaired and fitted out for war at his own cost in 1337. It cannot be stated from the information available, though it is more than has yet been found for any other ship of the class, that the result is likely to have been very decorative, but it can be said that she had new features which made for increased efficiency. She was assigned as flagship of the Earl of Derby, appointed to command a squadron which, after profitable service on the French coast, was transferred to the northern fleet, then commanded by Sir Robert Morley; with whom the earl, probably in the same ship, remained till after the victory at Sluys.

At that time the King's ships had a seaman complement in the larger classes of one man to 4 tons, irrespective of the soldiers put on board to take part in the fighting, then always in the nature of combined operations. If the complement is known, as is often the case, the size of the ship is known within a little; so, as the ship's company of the *All Hallows* numbered eighty or sometimes more, it may be decided that the ship was of not less than 300 tons.

It is of interest to see that the account of her refit¹ shows that several cabins were built into her, including one for the earl, and that these were not mere partitions of canvas as hitherto had been usual. There is, however, no indication of where they were and it is doubtful if they made much external difference to the ship save perhaps by cutting out a few lights close up under the deck right aft.² There was also an oven for baking bread, the like of which has not I think been heard of before; and there is a doubtful suggestion of what may have been what would, in the late sixteenth century at the earliest, have been called a round-house in the main chains. In any case, as the introduction of 'turrets' in great ships in anticipation of the later quarter-galleries did not begin till the very end of this century, any such excrescence from the ship's side or head or stern would not have been ornamented as deemed necessary some 200 years or more later.

A still more interesting feature of this refit is that it included the spending of three shillings 'pro quod' instrument' ferr' pro quarell' et pelottes plumbi inde sagittand' cum pulv' pro defens' navis' (for a certain instrument of iron for shooting quarells and pellets of lead therefrom with powder for the defence of the ship). It was bought at Southampton, not improbably on the inspiration of the earl himself, and though its advent was before the provision of a name for it, it was undoubtedly the first gun in the Royal Navy. The name Gun was introduced two years later and the French had one in 1338, described in similar fashion. It is very probable that both these little guns were at the battle of Sluys and exchanged compliments there. Before the First German War an English penny of Edward III's reign was about equal to our then half-crown, so that 3s. were worth about £4. 10s. 0d. On the other hand, iron was dear, 10s. or so per cwt., but labour was cheap, 6d. a day to a skilled man. What did the gun weigh? Not more than 30 lb.

There were two types of cog in the fourteenth century. One was of the original pattern which may have come down in unbroken succession from what the Romans named logically 'round ships', with both ends round and bluff; the other had been modified by the introduction of the stern rudder, a moderately raking sternpost and a stem, apparently straight or nearly so, making an angle with the waterline of some 45°. The hull did not project at all abaft the sternpost, so that there can have been no flat of the stern and no counter; the stem ended in a small top, which in the cog does not seem to have been dignified by the name of forecastle. What subject for decoration can there have been here? Clearly, only the rails of the poop, perhaps the rudder-head, the top, the cabin lights, the small top on the stem and the inboard work of the admiral's cabin. Towards this she had 1½ gal. of oil bought and 23s. 8½d. spent on divers colours bought for the painting of the ship. No master-painter or men styled painters were employed and no special charge made for the work done. It must have been paid for, however, and seeing that the oil and the paints cost 25s., that putting them on in the simplest of patterns must have cost at least as much again and that all other ships, even of much smaller size than a great cog, both before and after this date, spent much more on their decorations, it must be decided that the cog was essentially undecorative. It may be supposed that the *Thomas*, when the King himself was in her at Sluys, was made as handsome as might be; but the bills for her outfit are not available and it is only known that at Sluys and at the 'Stopping of the Spaniards' she sported a profusion of flags as was the fashion. So no doubt did the *All Hallows*, but her account only shows the issue to her of 2 yd. costing 8d. of red worsted to make a vane and of 4d. paid for a cloth (presumably) of linen whereon the arms of England were painted and placed on the bowsprit. This is interesting, both as showing that the junior admiral then had a distinguishing flag and that it was, at least sometimes, worn, as we would say, as a jack.

The second type of cog was known in France as the 'cog à bec' and she undoubtedly came later than the round cog. There must have been some in the English navy, for we made prizes of several of them; but as hitherto no one has learnt the individual names of any before or after their capture, and as no mention of the type name has been found in the English records, the fact of her existence here must be taken as a matter of faith. It is reasonably certain that the two types co-existed in the English navy till about the end of the reign of Edward III, when two new influences began to work changes in naval construction.

L. G. C. LAUGHTON

1 E 101/20 (27).

2 See *M.M.*, 1950, p. 267

THE BUNKER HILL GUN—SO-CALLED

There is a four-pounder brass cannon exhibited at the Citadel, Quebec, Canada, for the past eighty years, bearing the serial number 116 and the insignia of the State of Massachusetts, used on State-made cannon from the beginning of 1777 until 1783, which, careful research indicates, is a relic of the attack on a fleet of nineteen American warships and twenty-four transports carrying 3000 troops in Penobscot Bay, Maine, 14 August 1779. The gun is inscribed; 'Captured by the British at Bunker Hill June 17th. 1775', which is obviously untrue. It was brought to Quebec by William Horatio Tapp who served in the Ordnance Stores, Halifax, Canada, 1831-58, during part of which time J. W. Tapp was storekeeper (possibly a relative), he served at the Military Stores, St John, N.B., 1858-61, and from 1858 to 1867 at the Military Stores, Quebec, during which time he became Deputy Superintendent, with which position he acquired the rank of major. The guns taken from the American fleet by Sir George Collier (they carried 328) were taken to Halifax, N.S. Four guns identical to the above are known to have been on Col. Paul Revere's 'Ordnance Brig', which was burnt above the mouth of the river the morning of 15 August. Three guns identical to the above have been located: one at New Glasgow, N.S., one at Seattle, Wash., taken off the wreck of the Hudson's Bay Co. Brigantine *Una*, near Victoria, which ran on a reef in a storm 25 December 1851. The *Una* was built on the St John River in 1849 and sailed for London in June that year from St John, where it was turned over to the Hudson's Bay Co. The third has recently been found at Portland, Maine, and is believed to have been taken out of the Penobscot River in 1876.

For the full story of this gun see *Military Collector and Historian*, published in Washington, D.C., Spring issue, 1959.

R.G. CARPENTER

SALT WATER MILLS

(See *M.M.* Vol. 45, p. 81)

I was very interested to read Mr Harold Lowenstein's letter in the *Mariner's Mirror* asking for information about sea or tidal mills and I wonder if I may mention the interesting account of the working of the tidal mill at Bidston (now the 'Penny Bridge', East Float, Birkenhead Dock) as it was in 1740, which appears in vol. 78 on page 113 of the *Transactions of the Historic Society of Lancashire and Cheshire*. The author, Mr E. Cuthbert Woods, a vice-president of the society, has recently gone to live in Devon but his address is:

Green Gables,
Windermere, Westmorland.

These mills not merely worked machinery for corn-grinding but slitting machinery for working iron and were very well appointed: they may even have been too expensive to run as they did not survive the eighteenth century, although they were the darlings of a famous Liverpool business firm. Their earlier history is very tenuous.

According to Mr R. A. Stevenson, A.M.I.C.E., of the Mersey Docks and Harbour Board, there were tidal mills at Harrington, Liverpool, before the Liverpool Dock system engulfed them (see *Liverpool Nautical Research Society: News, Notes and Queries*, Vol. v, p. 3).

It has always seemed to me a great pity that tidal mills have not been in use in these latter days. There may yet be a future for the project.

RICHARD F. COOKE

THE JOINERY OF MEDIEVAL HULLS

In addition to what Mr W. Salisbury and Mr William A. Baker write about 'The joinery of medieval hulls', in the *M.M.* of July 1959, pp. 250-3, I should like to say that in my opinion an important article on this subject has been overlooked. It is called 'Carvel construction technique, nature and origin', was written by Olof Hasslöf, Stockholm, and appeared in the magazine *Folk-Liv*, 1957-58. Despite its title the article also deals with clinker construction.

Mr Hasslöf differentiates between shell-construction and skeleton-construction technique. Shell construction, he states, appeared in two variants: clinker construction, resulting in boat sides with ledges, and the dowelling technique, which provides smooth sides. Both variants of the shell-construction method were to be superseded by carvel construction, characterized by the initial construction of a frame skeleton.

I should like to draw attention to Mr Hasslöf's points of view. In my opinion his research in this field has actually found solutions for hitherto unsolvable problems.

KAREL BOONENBURG

A MEDIEVAL *VICTORY*

There has recently been found in a fourteenth-century exchequer account, a reference to a ship named the *Vyctorye*.¹ Apart from its associations, the name is important as a striking exception to the usual medieval preference for saints' and other religious names. Everyone who has worked upon medieval naval history knows how limited the choice was, such names as Trinity and Maudelyn constantly appearing together with those of popular saints like Christopher and John, but a search of the calendars of Close, Fine and Patent Rolls has failed to produce a single *Victory*.

The account is for payments made by John de Clifton while preparing ships to take John of Gaunt and Walter Hewet to Gascony in 1370, and in fitting out a fleet to cruise in the Channel under the command of Guy Brian. Clifton seems to have been a minor exchequer official and he appears elsewhere as a commissioner buying wheat in Sussex for the garrison of Calais.²

The entry in the account is very brief, merely stating that £20. 3s. has been paid to John Paul, master of a ship named the *Vyctorye* of 120 tons, for the wages of a constable and thirty-two mariners. The previous entry, a payment to Richard Fysshier of the *Seintemarcogge*, gives the period of service of these ships as from 11 July to 14 August. The name of the home port has disappeared but to judge from those which remain it was almost certainly Dartmouth.

Unfortunately, there is no evidence that our *Vyctorye* was a King's ship and the naval genealogist cannot claim her as an ancestor of Nelson's flagship, but she is of interest to students of that neglected subject, the history of ships' names.

A. T. HALL

A NAUTICAL TAUNT

Some writers, in commenting on the naïvety of old-time sailors, have employed the expression 'to have been round the world, but never in it'. This nautical taunt may have originated with Charnock in his *Biographia Navalis*, edition of 1796, when he speaks of Lord Anson:

'As to his natural disposition, he was calm, cool and steady; but it is reported that our honest seaman was frequently a dupe at play; and it was wittily observed of him, that he had been round the world, but never in it.'

Can an earlier instance be supplied?

EDGAR K. THOMPSON

QUERIES

1. (1960.) LISTS OF SHIPS AND CAPTAINS. There is a list of ships with their captains for the Summer Guard of 1644 in the Thomason Tracts in the British Museum. Catalogue number E. 669, Folios 1, 16. Beyond the Rawlinson List of the Winter Guard there seems to be no list of captains. Unfortunately, there is no list either of ships or of captains of the Winter Guard for 1643. *Lords Journals*, Vol. 5, p. 332 states their number as 46, and gives their stations, but that is all. I should be glad to know if any such list exists.

J. R. POWELL

1 Public Record Office, E 101-30-29.

2 Calendar of Patent Rolls, 1367-70, p. 330; 1370-74, p. 99.

2. (1960.) FRENCH SIGNALS OF 1782. In a painting of the Battle of the Saints by R. Paton, the *Ville de Paris* is shown flying the following flags and signals.

At the fore-topgallant masthead: a white flag with a blue saltire superior to a white flag with blue border and red centre (similar to W international).

At main topgallant masthead: what looks like a plain white flag.

At main topsail yardarm (starboard): a white flag with a blue saltire superior to a white flag with blue border and red centre (W international); superior to a flag divided red and blue horizontally (E international upside down).

At mizzen topgallant masthead: white flag with blue saltire.

Can any member give the significance of these signals or are they artist's licence?

C. M. BLACKMAN

3. (1960.) JACK OF DOVER. This was an old sea dish, the composition of which is now lost. Can any reader supply the recipe?

EDGAR K. THOMPSON

4. (1960.) 'NANCY DAWSON'. This was a popular air by which seamen were summoned to grog. It is not known if it was current in the R.N. or the Merchant Marine Service. Can any member help out?

EDGAR K. THOMPSON

5. (1960.) GEORDIE. This was an old-time seaman's nickname for any ship of the Royal Navy. It has been suggested that it was in memory of the *Royal George* but this explanation is not very satisfactory. It has also been expressed that it was in honour of all Kings known as George. Can members contribute a more logical explanation?

EDGAR K. THOMPSON

6. (1960.) SERPENTINE GUNS. Recently I had occasion to read one of your early issues, Vol. 3 to be exact, and I noticed in two articles—A Ship of Hans Burgkmair and in another A Battleship of the Renaissance—reference was made in both instances to shipboard ordnance called 'Serpentine Guns'. What sort of weapons were these pieces of artillery?

MARION ROBERTS

7. (1960.) ROBINSON CRUSOE. A problem which has given me some thought, is relative to the story of Robinson Crusoe. A friend, well-versed in nautical history and folklore, tells me the romantic tale of Defoe is not based on the adventures of Alexander Selkirk but on those of a Spanish adventurer of an earlier epoch. I wonder if your membership could clear up this point?

MARION ROBERTS

8. (1960.) THE *DIRETTORIO MARITTIMO*. In John Temple Leader's *Life of Sir Robert Dudley* (G. Barbèra, Florence, 1895) the author mentions his purchase of Dudley's own copies of *L'Arcano del Mare*, first edition, 1646-47. The four volumes were in old bindings stamped with 'the arms of a Cardinal of the Medici family'. Leader also mentions his ownership of a manuscript volume in Dudley's hand entitled *Direttorio Marittimo*, 'in very faulty Italian', and 'for the use and instruction of the officers of the Tuscan fleet'. Does anyone know the present whereabouts of this manuscript and of this particular copy of the *Arcano*?

OLIVER DUNN

9. (1960.) MERCHANT NAVY OFFICERS' ASSOCIATIONS. Can any reader give any information, or state where such can be found, about any Merchant Navy Officers' professional or protective Associations, Guilds or Unions which may have existed in the centuries prior to the formation of the Mercantile Marine Service Association in 1857?

KENNETH C. RATHBONE

10. (1960.) PORTUGUESE MAN-OF-WAR. Can any reader explain why siphonophores (genus *Physalia*) have a nautical term attached to their name and why Portuguese and not some other nationality?

EDGAR K. THOMPSON

11. (1960.) PORTUGUESE MAN-OF-WAR FISH. Why is the genus *Nomenus gronovii* designated with a nautical expression and how did 'Portuguese' get into the name? EDGAR K. THOMPSON

12. (1960.) MAN-OF-WAR BIRD. The frigate bird (genus *Fregata*) is well known as the man-of-war hawk. Is the sole reason for its nautical name based on its Latin classification. EDGAR K. THOMPSON

ANSWERS

29. (1955.) SETTING OF STUNSAILS. In the August 1955 *M.M.* Mr Claude Cumberlege mentions a painting by one of the Roux family showing a ship carrying port fore and starboard main studdingsails. If the ship had the wind somewhat on the port quarter this would be a normal way of carrying them, for the starboard sails would draw without becalming any other sails. When carried on the lee side the inner leech of the studding sail was set before the corresponding square sail and if this is evident in the painting it would indicate the direction of the wind relative to the ship. The expression *vent arrière* did not necessarily mean that the wind was parallel with the keel. Thus Bonnefoux, *Manoeuvrier Complet*, p. 72, says: *Vent arrière on mollit les bras de vent ceux de dessous le vent* (with the wind aft both the weather and lee braces are checked). When it was desired to specify that the wind was dead aft some expression such as *plein arrière* or *droit arrière* was used.

The practice of setting the lee main studding sails with the wind somewhat on the quarter will be found described in the old seamanship books, including that of Nares. If in the painting the starboard clew of the mainsail alone is set it would indicate that the wind was on the port quarter. The Roux family did not make nautical mistakes.

D. L. DENNIS

10. (1958.) SETTING OF GAFF TOPSAILS IN SCHOONERS. No doubt Captain Horka is right in stating in his Answer in the May 1959 *M.M.*, that American merchant schooners invariably set their gaff topsails to leeward of the peak halyards and to windward of the gaff—it is a subject upon which he knows far more than I. It was not, however, the invariable way of setting them in American yachts.

Conscious of the weakness of memory, I had recourse to a collection of photographs of American yachts. These were probably made in the period 1875–1910—two or three perhaps later. In the enumeration below I excluded all cases where it was at all dubious how the sail was set.

I have employed the following expressions.

Set standing. The luff is bent to hoops on the topmast and the sail furled at the masthead.

Set flying. The luff is bent to a yard and the sail is set and taken in from the deck in the manner of a studding sail.

Method 1. Set to leeward of peak halyards and to windward of gaff.

Method 2. Set to windward of the peak halyards and to leeward of the gaff.

Method 3. Set to windward of both halyards and gaff.

Method 4. Set to leeward of both halyards and gaff.

Method	Sails set standing	Sails set flying
1	10 cases	2 cases
2	10 cases	none
3	1 case	8 cases
4	10 cases	9 cases

It is somewhat difficult to understand what advantage Methods 2 and 4 could have over 1 and 3. The ten examples of Case 2 cannot be ascribed to the photograph having been taken when the vessel was making a series of short boards, because four are the fore topsail of schooners where the sail would have to be changed willy-nilly.

I also examined the reproductions of photographs of British yachts contained in the *Yachting*, the Badminton Library. Here I found but one example of a sail set standing and none of Methods 1 and 2. But, rather to my surprise, Method 4 was far more common than 3.

Inasmuch as speed was generally a first requisite in a yacht, this diversity would appear to indicate that there is no appreciable difference in the propelling effect of the sail, no matter how set.

D. L. DENNIS

9. (1959.) DOCKING A WOMAN. This expression involves cutting a woman's dress and petticoats off until they are as short as a sailor's jacket.

EDGAR K. THOMPSON

10. (1959.) FRENCH VOLLEYS. Edward Seymour in *My Naval Career* writes: 'The French Admiral Protet was killed. I commanded a company of small-arm men at his honorary funeral. I say honorary because the body was sent to France. At the above ceremony a custom, I have not seen elsewhere, was observed, viz., that the men, after the temporary interment in a sort of grave, all defiled past the coffin in a single line, and as they did so each in turn discharged a blank cartridge from his rifle into the tomb.'

EDGAR K. THOMPSON

11. (1953.) SPAR TORPEDO. The following sources are suggested for a study of the subject: J. M. Low, 'Mine and Countermine', *United Service Magazine*, vol. 213, p. 253; Hobbes, R. G. *Reminiscences*, Vol. 2, pp. 325-404; *Naval Chronicle*, Vol. 30, p. 302; J. A. Ferrer, 'Military Manners', *American Scenic and Preservation Society*, Vol. 25, p. 213; J. I. Gorman, *Modern Weapons of War*; J. T. Scharf, 'History of Confederate Navy', *United Service Magazine*, Vol. 11, New Series, Vol. 8, New Series; *Magazine of History*, Vol. 8, p. 255; *Magazine of American History*, Vol. 14, p. 622; *U.S. Naval Institute*, Vols. 6 and 16; *Journal of the Royal United Service Institute*, Vol. 22. In addition, Notes and Queries have many references to this particular subject.

EDGAR K. THOMPSON

1. (1945.) TRIATIC STAY. This is used in hoisting boats in or out of a vessel. It consists of two large pendants, the upper ends of which are lashed to the foremast and mainmast heads, while to the lower ends, fitted with thimbles, the stay-tackles are hooked. The lower ends of the pendants are held in their proper position by a span.

EDGAR K. THOMPSON

12. (1944.) TRYSAIIS. A fore-and-aft sail set on the fore and main lower masts of a ship. It is bent to a gaff, and is considered a storm sail, or one under which a vessel can lie-to easily during a gale. It is derived from 'try' meaning to lie to.

EDGAR K. THOMPSON

16. (1955.) POLACRES. A ship or brig of the Mediterranean. The masts are commonly formed of one spar from truck to heel, so that they have neither tops nor cross-trees; neither have they any foot-ropes to their upper yards, because the men stand upon the topsail yards to loose and furl the upgallant sails, and upon the lower yards to loose, reef or furl the topsails, all the yards being lowered sufficiently for that purpose. Also written polacca.

EDGAR K. THOMPSON

14. (1923.) THE STORY OF THE VICTORY (Lobscouse). This topic was considered in 1923 by quoting from a letter dated 1760 wherein the composition of Lobscouse was described as being beef, onions, bread and potatoes minced and stewed. No mention was made of the etymology of this odd word. It has been variously spelled as Lobscouse, Lobscourse and Lap's Course. In Sweden it is spelled Lappsouse. Lob is also a Sheffield word meaning to boil. It is suggested that 'lob' which is something thick and heavy and 'course' meaning dishes are placed upon the table at one time, might be the origin of this allegedly palatable seaman's dish. If this dish was made without meat, it was called bread-scouse. Comments are desired as to the origin of this nautical word.

EDGAR K. THOMPSON

14. (1959.) NAUTICAL TERMS. 'Waggoner' is 'Waghenaer', the surname of the author of the *Spiegel der zeevaerdt*, which was translated into English and published as *The Mariners Mirror* in London, 1588. 'The author's name was so thoroughly adopted by English mariners that "Waggoner" eventually became synonymous with any volume of sea charts' (*The World Encompassed*, Walters Art Gallery, Baltimore, Md., 1952, no. 182). The name also applied to books of sailing directions (*O.E.D.*, art. 'Wagoner, Waggoner'). The *O.E.D.* gives an example of the phrase 'quarter waggoner' from Bernard Romans' *Concise Natural History of East and West Florida*... New York, 1775: 'The compilers of the quarter waggoners... have corrupted it to Ponio Bay.' I suggest that 'quarter' is a corruption of 'quarto', to indicate that the waggoner referred to are of smaller format than the earlier folio volumes.

OLIVER DUT

REVIEWS

THE TRAGIC HISTORY OF THE SEA, 1589-1622. By C. R. BOXER. Cambridge University Press for the Hakluyt Society. $9 \times 5\frac{3}{4}$ inches; 297 pages. Price 40s. net.

Professor Boxer has made translations from three narratives of shipwreck, first published in Portuguese classic *Historia Tragico-Maritima* by Bernardo Gomes de Brito (1729-36). As an Introduction, he has provided a valuable account of early Portuguese voyages to Goa, discussing in some detail the conditions under which the carracks lumbered their way over half the world's surface. Such conditions would seem almost incredible did one not know, from other ranges of contemporary documents, that they were so. When one of these vessels foundered, generally on the African littoral, the castaways—those who survived, usually a miscellany of soldiers, sailors, slaves, priests with sometimes a few women and children—had to make their way to the nearest Portuguese trading or military post, which might be anything from 500 miles away to three times that distance. Safety depended on the success of what contact they made with the Bantus and Hottentots of the interior. Survivors needed leadership (as well as piety) to carry them through and this they sometimes found.

The whole atmosphere, worlds apart from our own time, is as strange as it is enthralling. Boxer as a record of seafaring and an account of sixteenth- and early seventeenth-century Africa. Professor Boxer's translations have the greatest interest. The three shipwrecks with which he is concerned are those of the East Indiamen *Sao Thome* (1589), *Santo Alberto* (1593) and *Sao Joao Baptista* (1622), and the translator's analysis of the most usual causes of loss cause only surprise in the fact that it was not even more frequent. 'They were mainly due', he says, 'to wilful overloading by the officers, passengers and crew, and to the superficial and inadequate careening carried on during the ship's stay at Goa. Contributory causes were inefficient stowage of the cargo; leaving Goa too late in the season; the crankiness of the top-heavy four-decked carracks; ships in a fleet parting company so as to reach Lisbon first and get a better market for their 'private trade'; the mulish obstinacy of some of the pilots; and the incompetence of some gentleman-commanders.'

Professor Boxer's appendices include particulars of pay and allowances of Portuguese East Indiamen; provisions; allotment of deck and cargo space; and he adds a useful glossary.

OLIVER WARN

THE END OF THE VOYAGE. By PETER NORTON. Percival Marshall and Co. Ltd., 19-20 Noel Street, London, W. 1, 1959. 9×6 inches. 145 pages with index and bibliography. Price 25s. net.

This is a book after my own heart.

As the author tells us, it was conceived as a memorial to vessels whose beauty and usefulness will soon be seen no more. And what nostalgic memories it evokes for people like this reviewer

whose acquaintance with fishing and coastal sailing craft goes back to the early 90's of the last century. But why go back as far as that? Right up to the 1914 war, every little port round the British Isles had its quatum of topsail schooners, ketches, sailing barges and fishing craft of varied size and rig.

I suppose my first interest in sailing craft of any kind was in such small fry as frequented Portsmouth Camber, and further up the harbour to Flathouse Wharf, Portchester and Fareham Creek. I was a boy at Burney's Royal Naval Academy at Gosport at this time, one of 'Burney's bulldogs' in fact, and from the school playground on the water's edge we could watch everything that moved up or down the harbour. From there I went to the *Britannia* at Dartmouth, the home, or birth place, of many Brixham trawlers and other small craft.

Some of the trawlers were at this time still cutter rigged, though the greater number were already of the larger ketch-rigged type, and what splendid fast and seaworthy ships they were. Pilot cutters, coast-guard cutters, and even the naval training brigs paid us an occasional visit at Dartmouth and I confess that messing about in boats was my principal recreation during the summer months.

A little way up stream of the *Britannia* were moored two old Newfoundland brigs, the *Terrier* and the *Beagle*; pretty little ships of perhaps 300 tons; they must have been among the last of the brig-rigged merchant ships in the Atlantic trade.

Captain Norton begins his admirable book with a description and excellent drawings and plans of the Thames and Medway barges; surely the most picturesque of all our coast-wise sailing vessels. Everyone who has known the Thames estuary must have loved its barges and indeed the hardy men who sailed them with such extraordinary skill and knowledge of tides and shoals of the dangerous waters of the east coast. The idea that a barge must be a slow and clumsy vessel is a very false and mistaken one. I have myself a very clear recollection of seeing the winner of the Annual Barge Race, sailing round the thirty-mile course at an average speed of 10 knots. That was many years ago, before World War I, but I have no doubt that some of F. T. Everard's fine vessels could do as well to-day. There is no braver sight than to see one of those splendid ships in racing trim roaring up river with every stitch of canvas crowding. The other very well-known Thames and Medway craft was the bawley. She too was credited with a rare turn of speed, and needed it, when racing home with her catch of shell-fish for the early market in London. Yet often have I watched a bawley and a barge sailing tack for tack up river in a hard breeze, and the barge would overhaul and pass the bawley.

And so our author goes on, right round the coast drawing and describing coasting schooners, pilot cutters, sailing trawlers, hookers, Penzance luggers, Falmouth quay punts, and the many fine fishing craft of the coast of Scotland. I have known and loved them all, from the Loch Fyne kiff to the noble *Zulu*, the Queen of all luggers with her length of 80 or 90 ft., and her tremendous mainmast 20 in. and more in diameter at the deck, and her enormous lugsail needing a large crew of able-bodied seamen to handle it.

And what a turn of speed they had too those Zulus in the hard winds and rough seas of those northern waters. They are all gone now of course, like the great Banking Schooners out of Gloucester, Lurenborg and Newfoundland. The hulls—or some of them—are still there, but they too are driven by a couple of Diesel engines, and with nothing but a rag of riding sail left to show that they once had been the speediest and most beautiful ships of the North Atlantic.

In fine, one cannot praise this book too highly; within its compass it is unique in the way it covers such a large subject, and the illustrations and plans are first class in every respect. Our hearty congratulations to Captain Norton.

A. MACDERMOTT

THE SECRET CAPTURE. By CAPTAIN S. W. ROSKILL, D.S.C., R.N. (Retd.) London: Collins, 1959. 156 pages; Index, 15 plates, 6 maps, 2 diagrams. Price 16s.

This is a book about one of the battles of the campaign of the Atlantic. Captain Roskill is a lucid and skilful author and, to these essential qualities for success in telling a tale, he adds that of style—the something that so stimulates the reader's mind that he reads on voraciously to know the end. Physically *The Secret Capture* is a slim book—barely 150 pages—but mere size is no measure of a book's worth. That this one is admirably illustrated with appropriate photographs, charts and diagrams adds, in itself, much to its value, for by these means much more is conveyed by study of it as a whole than by mere reading of the text alone. In short, a great merit of this book is that it conveys so much information so attractively and in such small compass.

Ostensibly the tale told is that of the secret capture—kept secret until now from friends and foes alike—of U. 110 commanded by Lemp, on 9 May 1941, by Commander (as he then was) Baker-Cresswell, R.N., south-west of Iceland. Like that of all the other U-boat 'Aces' who came to grief (including Doenitz himself in the First World War) Lemp's U. 110 met its fate attacking a convoy. It was Lemp who had sunk the liner *Athenia* on the first night of the war. It was his action of an 'Ace', for, like the rest of the Aces, Lemp gained his reputation by attacking chiefly defenceless merchant ships; attacking convoys was a very different matter, if proof be needed that it can be given; there were no 'convoy U-boat Aces'.

While the capture of U. 110 gives Captain Roskill's book its title, and enables him to sketch in the capture of other submarines during the war, the capture itself is really no more than an episode of virtually accidental interest; by far the most important part of the book is a brilliant analysis of the operation of the convoy system as developed by the Admiralty by the spring of 1941. This is enlivened by a vivid account of the contested passage of an overseas trans-Atlantic convoy to its dispersal point in the icy waters south of Greenland, the limit of the surface escorts' endurance at this time, and hundreds of miles beyond that of the aircraft provided by the Admiralty Ministry for anti-submarine Atlantic convoy escort.

The prime importance of Captain Roskill's book is that it contains the only account yet published of how, during the Second World War, the British mercantile convoy system worked, of how a convoy was controlled at sea, and of how the escorts fought the convoy's assailants, both by day and by night. Moreover, it gives the clearest illustration to date of the operational limitations imposed on our convoy forces by the pre-war years of neglect to provide and train forces for their prime task in war, convoy work. In short, sufficient detail is given for the reader to discern the essential features of convoy warfare in the twentieth century. For this reason alone, the general reader, most certainly the student, of maritime history, cannot afford to neglect this book if he wishes to understand the decisive campaign of the war, the Atlantic struggle, for here it is epitomized.

The secret to understanding the campaign of the Atlantic is to understand the convoy system of warfare. This has been very ill-understood in the past 100 years, and in many quarters it still—by many 'convoy' is still regarded as a palliative, not seen to be a scientific system of warfare. This is partly because from many histories it is difficult, if not impossible, to comprehend the convoy system of warfare. A chief reason for this in the last century has been the obscurantist language used to describe and to discuss maritime (and other) warfare. The reader should therefore understand that during the age of sail, and from Commonwealth times, the British Navy was organized, administered and operated systematically on the basis of mercantile convoy. It was the largely seasonal movement of the merchant ships employed in the various 'Trades', and the periodic strategic movements of the naval and military supply ships and transports, *in convoy*, which dictated, in conjunction with the probable enemy threat, the dispositions and movements of our naval forces. Whenever and wherever the merchant and military ships ran risk of attack they were sailed, in so far as it lay within the power of the Admiralty, in convoy; and, for two reasons, to ensure concurrently their greater safety in the event

of attack, and the probability of our forces finding and defeating the threatening enemy forces in decisive action before the ships to be kept secure could be attacked. This explains why virtually all the battles fought in this period were convoy battles, and why knowledge of this further fact explains (what long mystified this reviewer as a junior officer) how Admirals knew when and where to find the enemy—other than on the basis of guesswork, special intelligence or divine inspiration. The short explanation, in fact, is that, as a result of knowing and of operating efficiently their own convoy system, and of understanding that of their enemy, the Admirals knew rationally when and where to operate their forces—with threatened convoys—so as to ensure the security of their own convoys at the most probable point of attack and the defeat of the enemy there, and to oppose successfully the passage of the enemy's convoys. Thus to the reader, as to the Admirals of former centuries, knowledge of the opposing convoy systems operated during a campaign is a prerequisite to understanding the pattern of maritime operations. Into this knowledge must be spliced the further knowledge of the effect of the inability of seamen of all nations to find longitude accurately. The effect was to oblige them to run down the latitude of the time-tested landfall on the particular coast they were approaching or off which they were operating—Cape Clear, the Lizard, Ushant, Finisterre, the Rock of Lisbon or Cape St Vincent, on the west coast of Europe, Flamborough Head on the English east coast—and to make the land-fall in daylight. This conjunct knowledge, of which that of the effect of longitude is a constant in the age of sail, immediately discloses the pattern of maritime operations in any war of the period. Furthermore, it shows it to have been rational and pre-ordained; rational because operations were based upon the predictable movements of controlled numbers of ships, convoys; fore-ordained because the movements of the ships in convoy were conditioned by the prevailing politico, economic, seasonal and meteorological settings, by the operational limitations imposed by geography and the navigational techniques in use, and by the numbers and fighting power of the opposed forces.

War is a business of position. For this reason mobility is the indispensable key to success. In the age of sail we made our warships as mobile as the ships whose safe passage by sea it was their business to secure; the merchants, shipowners and Lloyds saw to that. We were able, as a consequence, to place our available forces in the decisive positions, with the threatened convoys, wherever from commercial or military necessity they might be, and in such numbers that, if the enemy attempted to attack, his forces were opposed by superior forces, and defeated.

What Captain Roskill's present book so clearly shows is that, in the inter-war years, as a result of failing to understand the convoy system of warfare, we had failed to provide both ships and aircraft capable of operating it efficiently if war came. Thus, when war did come and, as in all previous wars, we attempted to counter enemy attacks on our ships by a system of convoy we were incapable of doing so efficiently. Neither the warships nor aircraft were as mobile strategically as either the ships—which it was their business to protect—or the U-boats—which it was their business to oppose if they attacked the ships.

In May 1941, however, the problem was not as yet one of getting convoy forces right across the Atlantic but of little more than half-way. This our surface A/S forces could then do, thanks to the recent occupation of Iceland, but not our maritime aircraft, even when operating from Iceland. This was the result of priority given to the so-called 'strategic bombing' policy, i.e. the policy of using aircraft primarily to attack targets of only indirect military importance, chiefly civilian houses in conurbations remote from the decisive naval or military theatres.

Air escort (not radar) was the nub of the Atlantic problem (as in the First World War) because (as then) the mobility of U-boats when surfaced was superior to that of most of the surface anti-submarine convoy escorts, and because aircraft, whether they had lethal anti-submarine weapons or not, with convoys forced U-boats to submerge, and thereby to forfeit their superior surface mobility. Thus aircraft with convoys deprived U-boats of both their superior surface strategic mobility (essential for closing rapidly in on convoys in packs) and their superior surface tactical mobility (vital for closing in individually on ships in convoy to sink them). In the long nights of 1940/41 the U-boats had exploited the absence of air escorts with convoys during the hours of darkness by attacking ships in convoys at night surfaced, after having closed in surfaced by day (a practicable operation because of paucity of air escorts by day). But now, in the spring and

summer of 1941, in these high northern latitudes, there was virtually no darkness. Therefore aircraft were no longer blind for many hours of the 24 hr. day. They could operate all day. As a consequence their presence or absence determined the U-boats' strategy, the U-boats' tactics, and the outcome of every convoy battle—if air escorts were present with a convoy there was virtually no risk to the ships in convoy (only a *dozen* ships were lost in the Atlantic during the whole war when air as well as surface convoy escorts were present), if they were absent the U-boats got their scalps. If air escorts were with a convoy the U-boats could neither close in rapidly on the convoy nor, if they did eventually get into favourable positions from which to proceed to attack ships in the convoy, could they attack surfaced—only submerged. If they attempted this their mobility was then inferior to that of the surface escorts, and, as a consequence, to attack was to invite destruction. This was common doctrine, in 1918, to both the Allies and the enemy, a fact which gives a wry twist to the drama Captain Roskill so ably unfolds, and which Lemp disregarded at the cost of his life.

It is to be hoped that Captain Roskill will give us another study of the Atlantic campaign, of the period two years later, when we had perfected the convoy system. May 1943 saw the decisive defeat of the U-boats. We would welcome as vivid a description of our convoys in the hour of victory as Captain Roskill has given of them in their adversity.

D. W. WATERS

EDITORIAL NOTES

The Publications Committee has authorized certain changes in the format of the *Mariner's Mirror*, beginning with this issue.

The most noticeable alteration is the removal of the Table of Contents, for each individual number, to the first page of the expendable advertisement section. For the benefit of those readers who make a practice of having their quarterly issues bound, a complete table of contents will be supplied annually with the Index; thus for them the anomaly of having five Tables of Contents in the bound volume will be removed, while a page and a half more will be available for the text in each number.

It will also be apparent that, starting with this volume, the 88 pages hitherto allotted to each issue have been reduced to 80. This is an experimental economy measure recommended by the Council.

A further change in the current volume is that it is proposed to dispense with the elegant, but wasteful, blank spaces formerly left when an article had not filled its last page. The next article will, in future, start, space permitting, where the last one ended. This will give anything up to three extra pages of text in each number, thus to some extent offsetting the reduced number of pages.

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